Cutting Optimizer

Rel. 7.3x - User Manual

Summary

SUMMARY **1**

INTRODUCTION **3**

GENERAL 3
USING THE KEYBOARD 5
STRUCTURE OF A WINDOW 6
HOW TO MOVE IN THE WINDOW 6
HOW TO SELECT AN OBJECT 6
CONVENTIONS 6
UNITS OF MEASUREMENT 6
INSTALLATION 7

MAIN PAGE **8**

Operation *8*

MENU BAR **9**

CONFIGURATIONS **12**

INTERNATIONALIZATION 13
GENERAL CONFIGURATION 14
OPTIMIZATION PARAMETERS 18
Optimization parameters *19*
TIME CONFIGURATION 26
UNLOADING CONFIGURATION 31

TYPE MANAGEMENT **34**

MATERIALS MANAGEMENT **36**

Description of programming table fields *38*

JOB MANAGEMENT **40**

Description of fields of the programming table *43*
MATERIALS ASSOCIATION 44
PROCESSING. 46
ANALYZE 47
ANALYZE – GENERAL STATISTICS 54
ANALYZE – PANEL STATISTICS 56
ANALYZE – STRIP STATISTICS 58
ANALYZE – STACK STATISTICS BY CODE 60
ANALYZE – STACK STATISTICS BY CHRONOLOGICAL ORDER 62
ANALYZE – PALLET COMPOSITION STATISTICS 64
ANALYZE – PATTERN EDITOR 66
IMPORT 72
DELETE 73

MULTI-JOB PROGRAMMING **74**

Description of fields of the programming table *77*
PROCESSING. 79
MULTI-JOB MANAGEMENT 80
MULTI-JOB REPORT 80

PATTERNS ARCHIVE **80**

Description of fields in the right section of the screen *80*
PIECES LIST **80**
Description of fields of the programming table *80*
PROGRAM EXPORT **80**
Operating functions *80*
MACHINE PARAMETERS 80
SEND PROGRAMS 80
UTILITIES **80**
Operating functions *80*
LABEL EDITOR 80
Program overview *80*
File Menu *80*
Edit Menu *80*
Visualize Menu *80*
Objects menu *80*
PRINT LABELS 80
INFORMATION **80**
PASSWORD **80**
SOLUTION TO THE MOST COMMON PROBLEMS **80**
RELEASE **80**
GLOSSARY **80**
HARDWARE CONFIGURATION **80**
APPENDIX A **80**
1. DATA FORMAT OF TEXT FILE FOR IMPORT REL. 6 80
2. DATA FORMAT OF STOCK FILE 80

Introduction

General

The software described in this manual is a tool for optimizing the cutting plans with reference to one or more panel or off-cut lists to be produced, for managing the raw materials stocks and for converting the optimized cutting patterns into programs for controlling the panel saw.
N.B.: The “best solution” of cutting patterns determined by the optimizer is the one which tends to cost the least at the end of the panel sawing process on the basis of the set optimization parameters; it is therefore important to set the configurations correctly and assign the correct priorities to the board sizes of the materials.
We shall assume in this manual that the reader has already used the operating systems Windows 95/98 or Windows NT/2000/XP.

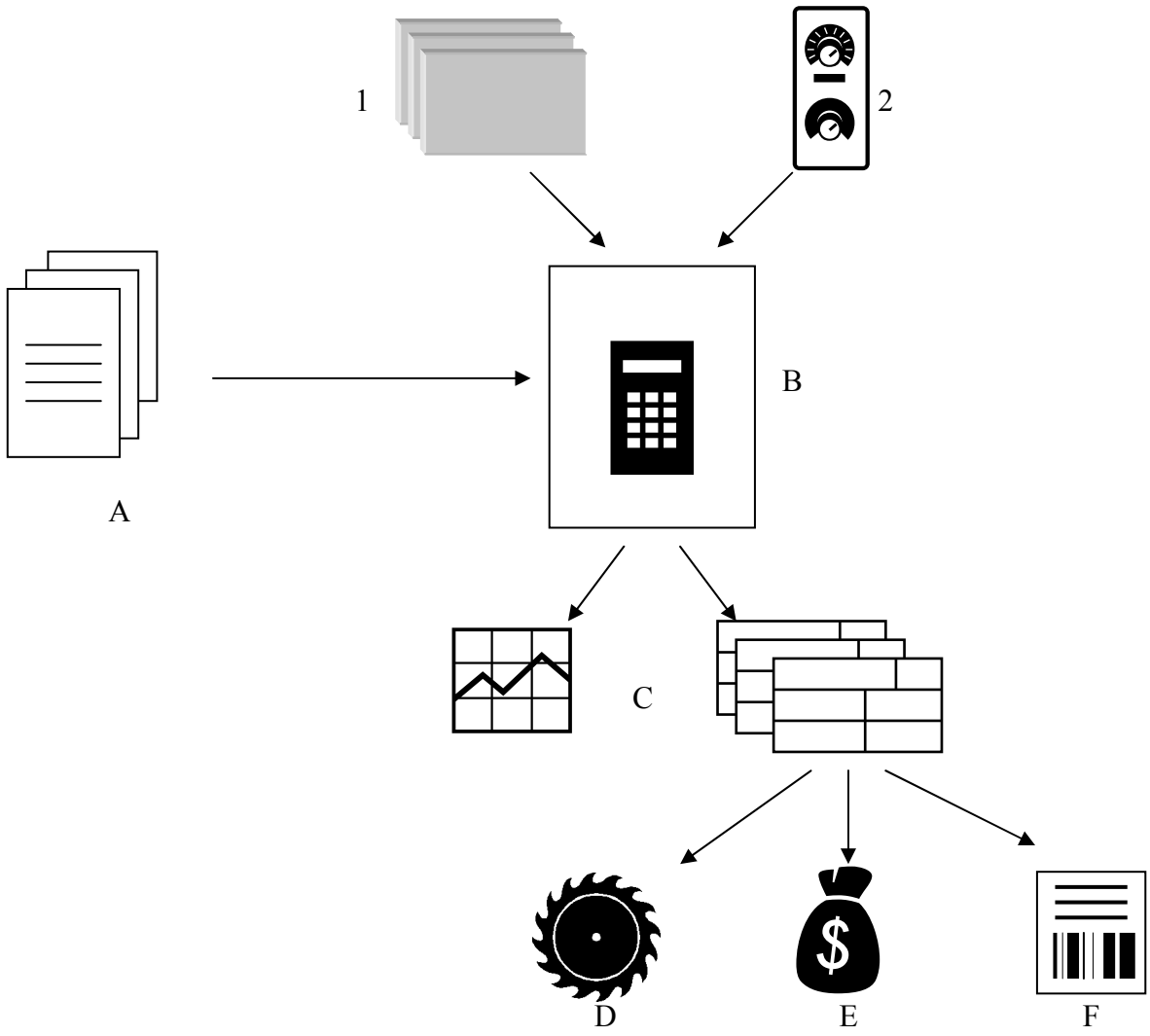
How to obtain the cutting plans easily

The first steps are as follows:
- Insert the board sizes of the materials into the materials file (1);
- Set the system configuration, the optimization parameters and the machine parameters (2);

These two operations are usually carried out just once and do not need to be repeated if the working environment does not change.

The production lists may now be inserted and the cutting plans optimized
To optimize a job just:
- Program the panel list (A);
- Optimize the list (B);
- Display or print the results (cutting plans, requirements, reports and statistics) (C).

It is also possible:
- To send the optimized cutting programs directly to the CNC of the panel saw (D);
- To obtain estimates on the times and costs of the job (E);
- To print the labels related to the panels (F).



Using the keyboard

In addition to the normal alphanumeric keys used for introducing data, there are others which carry out special functions:

Enter	1. to enter data in the windows with the relative option 2. in the tables this confirms the not empty field value 3. in the tables on an empty field other than the code, this inserts the field of the previous line 4. in the tables on the empty code field, this inserts the progressive number of the line
Tab	this shifts the focus from the current object to the next one
Shift + **Tab**	this shifts the focus from the current object to the previous one
PageUp	in the lists and in the tables, this shifts the display onto the previous page
Page Down	in the lists and in the tables, this shifts the display onto the next page
Home	1. in the text or numerical fields, this shifts the cursor to the start 2. in the lists this shifts the focus to the first element 3. in the tables this shifts the focus to the first cell displayed top right
End	1. in the text or numerical fields, this shifts the cursor to the end 2. in the lists this shifts the cursor to the last element 3. in the tables this shifts the focus to the last cell displayed bottom right
Arrows	1. in the tabulation groups, these allow the focus to be shifted among the various objects 2. in the text or numerical fields, these move the cursor among the various characters 3. in the lists, these shift the focus to the preceding or next line 4. in the tables, these shift the focus to the preceding or next cell (line or column)
Space	on a selected button, it presses it
Ctrl + **'**	in the programming tables, this copies the value of the field from the preceding line.
Delete	in the programming tables, this deletes the content of the cells
Ctrl + arrow ↑	in the programming tables, this places the cursor in the first row at the top
Ctrl + arrow ↓	in the programming tables, this places the cursor in the last row at the bottom
Ctrl + arrow →	in the programming tables, this places the cursor in the last column on the right
Ctrl + arrow ←	in the programming tables, this places the cursor in the first column on the left
Ctrl + Mouse	Keeping the CTRL key pressed and selecting a cell, it is possible: to select non-adjacent rows if a fixed column cell is selected 1. to select non-adjacent cells, if one of the table cells (accessible) is selected.

Structure of a window

The windows are divided into three main parts:

- title bar
  this is to be found in the top part of the window and indicates the currently active function.
- menu bar (pull down)
  this is to be found under the title bar; upon clicking on a main item, the items related to the active functions in the current context are displayed.
- tool bar
  this is to be found under the menu bar; it contains the buttons related to the available functions in the current context (the buttons may or may not be activated by the program). Keeping the mouse cursor for a few moments on a button, a brief description of the function associated with it is displayed.
- body
  this is to be found in the central part of the window and contains one or more objects such as lists, tables, drawings, etc..
- title bar
  this is to be found in the bottom part of the window; it gives the description of the button of the tool bar or of the menu item under the mouse cursor.

How to move in the window

To move from one object (or group of objects) to the next, just press <Tab>.
To move from one object (or group of objects) to the previous one, just press <Shift><Tab>.
To move from one element of a list to another, just use the arrows or <Enter> or <Tab>..
To move within the cells of a table, just use the arrows or <Enter> or <Tab>.

How to select an object

To select the object of a window, just position the focus on it (the contents of the object may appear in reverse color, in the programming tables the selected cell has a bold outline.

Conventions

Origin of cutting pattern
The point of origin of a cutting pattern on the video and in print is positioned in the bottom left corner (the longitudinal cuts will be carried out from the bottom towards the top and the cross one from left to right).

Right/left side
The right and left side of the machine is identified by standing at the outlet and looking at it.

Left/right panel zero
Left panel zero is defined as the left side of a panel aligned on the left.
Right panel zero is defined as the right side of a panel aligned on the right.

Units of measurement

The units of measurement used are:

Size values (length, width, thickness, etc..)	Mllimeters/Inches decimals.
Speed	Meters per minute.
Time	Seconds.

The size values may be inserted with precision up to 3 decimal figures.

Installation

Before starting the installation procedure, make sure that the computer has sufficient resources for correct execution of the program. If in doubt, consult the "Hardware Configuration" section in the manual.
Check that the following material has been supplied with the software:

- Installation CD-ROM;
- Hardware key for protecting the software. The hardware protection key is a small plastic container similar to the drawing below, in which the correct direction for insertion of the protective key into the parallel plug (A) or USB (B) of the computer is also shown.

A

B

Installation procedure on Windows 95/98/NT/2000/ME:

1) switch off the computer

2) insert the hardware key into the parallel port

3) start the PC.
IMPORTANT: in computers with operating systems Windows NT/2000 execute a LOGIN as Administrator (at the request of Windows insert the word *Administrator* into the username field).

4) insert the CD ROM into the relative reader; after a few moments the installation procedure will start automatically. If this does not happen, digit <Nome unità>:\SetUp.exe from the item "Esegui" of the "Start" menu of Windows and press the OK button (nome unità is the letter that identifies the CD-ROM reader (D, E, etc..).

5) wait for the end of the installation procedure.

6) during installation the icon of the program is added to the "Start/Programs" menu and to the Desktop of your computer.

CAUTION.

- The hardware key may only be inserted or removed with the PC switched off
- In computers with operating systems Windows NT/2000, before executing the installation procedure, start Windows and execute the LOGIN as ADMINISTRATOR.

Main page

This is the program presentation page upon switching on. Access can be gained from this page to the main operating functions.
The application page can be reduced to an icon, redimensioned or closed by clicking on the three buttons top right on the title bar.

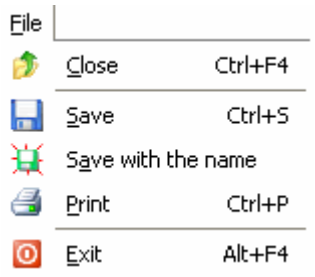
Operation Access the required function by selecting one of the main menu items

Menu bar

The OTTIMO menu bar consists of 8 main menu titles accessible by using the left mouse button or from the keyboard by pressing simultaneously the <Alt> key and the letter underlined in the menu title to be selected.

File Menu

This makes available the functions for data management of the active window



Close the active window

Save the contents of the active window

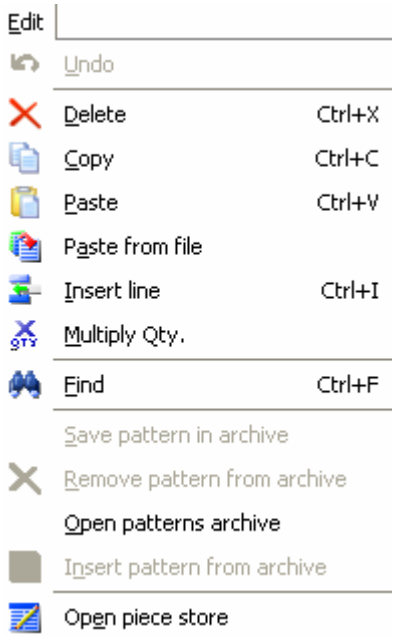
Save the job with another name

Print the contents of the active window

Close the OTTIMO application

Edit Menu

This makes available the functions for editing data in the programming tables and in cutting patterns analysis.



Undo the last executed command

Delete the selected lines

Copy the selected cells of the active programming table into the clipboard

Paste the contents of the clipboard into the active programming table

Insert the panel data from an existsing job

Insert an empty lines into the editing table

Multiply the required quantities of panels of the active job

Display a status bar at the bottom of the programming tables, from which a value may be edited or searched for in the table.

Save the selected pattern in the patterns archive

Remove the selected pattern from the patterns archive

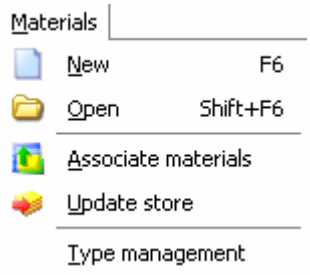
Open the patterns archive page

Insert the selected pattern into the open job

Open the workpiece programming page

Materials Menu

This makes available the functions for managing data related to the materials archive



Open the new material programming page

Open the materials programming page

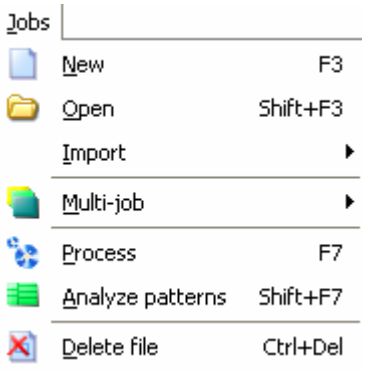
Associate the materials with the selected job

Update the materials archive

Open the type programming page

Job Menu

This makes available the functions for managing data related to the jobs/multi-jobs archive .



Open the programming page of a new job

Open the programming page of an existing job

Import data of a job from various formats (See below)

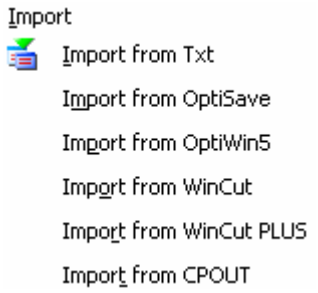
Multi-job management submenu (See below)

Process/optimize data of the active Multi-job/job

Analyze the results (cutting patterns) of the active job

Delete one or more jobs from the archive

Import management submenu



Import from ASCII file

Import from OptiSave

Import from da OptiWin5

Import from Wincut

Import from Wincut PLUS

Import from CPOUT

Multi-job management submenu

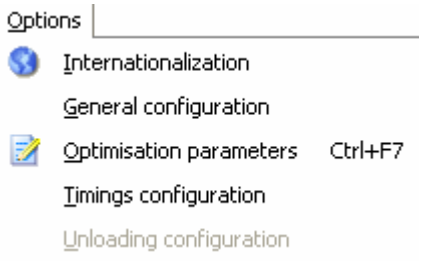
Insert a new Multi-job

Open an existing Multi-job

Display the Multi-job report pages

Options Menu

This makes available the functions for managing data related to the program configurations.



Open the Internationalization page

Open the General configuration page

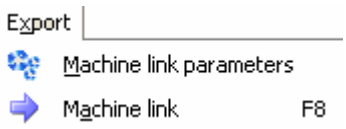
Open the Optimization of parameters page

Open the Timings configuration page

Open the unloading Configuration page

Export Menu

This makes available the functions for managing link-up with the panel saw control.

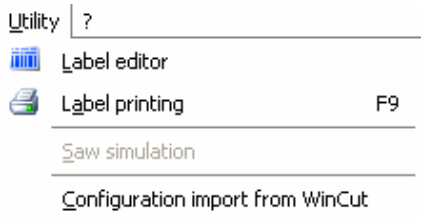


Open the page for the export configuration

Open the Machine link page

Utility Menu

This makes available the optional utility functions of the program.



Open the Label editor page

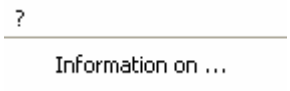
Open the Label printing page

Open the Simulation page

Import configuration from WinCut

Menu ?

This makes available the program help functions.



Open the Ottimo – Information page

Configurations

There are four programming pages of the OTTIMO configuration parameters, all accessible from the *OPTIONS* menu title of the main menu:

- INTERNATIONALIZATION
- GENERAL CONFIGURATION
- OPTIMIZER PARAMETERS
- TIME CONFIGURATION (Optional).

To prevent accidental editing of data by non-authorized operators, the programming pages of the *general configuration* and *time configuration* parameters are only accessible for updating through password.
If no password or the wrong password is entered, the corresponding display pages will be accessible for reading only and it will therefore be impossible to edit data.
The password is given by the supplier upon delivery of the product and may be requested after that from personnel providing technical back-up on the product.

Internationalization

The internationalization page allows the language to be set for messages and for the program windows, as well as the units of measurement used for the dimensions.

The window layout is as follows.

Additional functions

Consult the *"Using the keyboard"* section at the beginning of this manual.

Language:

To make the selection, click on the flag until the one corresponding to the required language is displayed and confirm (green key)

Available languages:

- Italian
- English
- French
- German
- Spanish

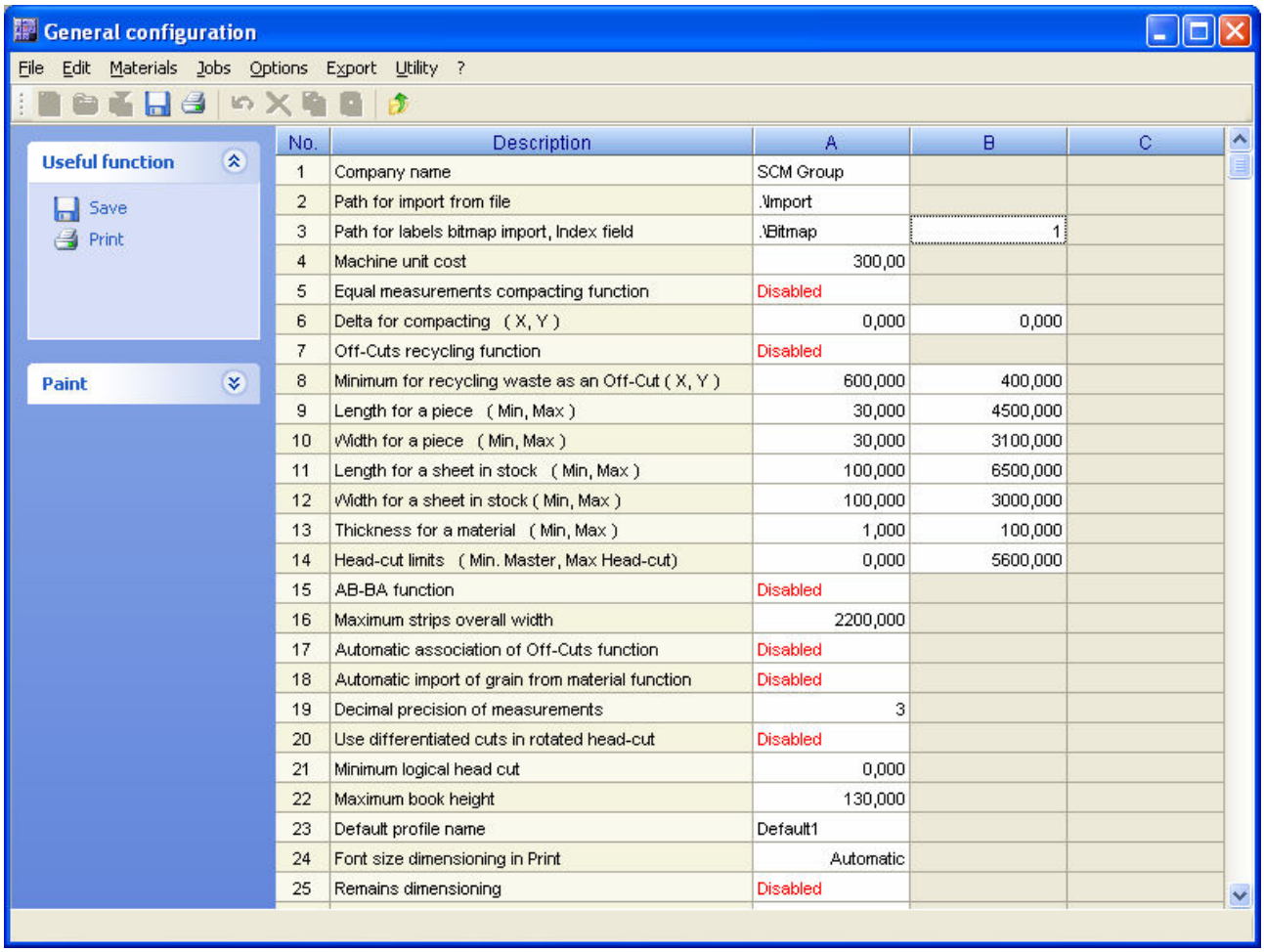
Units of measurement:

Select the unit of measurement used for the dimensions from:

- **Millimeters** (precision 0.001 mm)
- **Decimals of an inch** (precision 0.001 inches);
- **Fractions of an inch** (precision 1 / 64th)

General configuration

The display page allows the general configuration parameters of the working environment to be programmed.
The page, protected by password, has the following layout:



No.	Description	A	B	C
1	Company name	SCM Group		
2	Path for import from file	.\Import		
3	Path for labels bitmap import, Index field	.\Bitmap	1	
4	Machine unit cost	300,00		
5	Equal measurements compacting function	Disabled		
6	Delta for compacting (X, Y)	0,000	0,000	
7	Off-Cuts recycling function	Disabled		
8	Minimum for recycling waste as an Off-Cut (X, Y)	600,000	400,000	
9	Length for a piece (Min, Max)	30,000	4500,000	
10	Width for a piece (Min, Max)	30,000	3100,000	
11	Length for a sheet in stock (Min, Max)	100,000	6500,000	
12	Width for a sheet in stock (Min, Max)	100,000	3000,000	
13	Thickness for a material (Min, Max)	1,000	100,000	
14	Head-cut limits (Min. Master, Max Head-cut)	0,000	5600,000	
15	AB-BA function	Disabled		
16	Maximum strips overall width	2200,000		
17	Automatic association of Off-Cuts function	Disabled		
18	Automatic import of grain from material function	Disabled		
19	Decimal precision of measurements	3		
20	Use differentiated cuts in rotated head-cut	Disabled		
21	Minimum logical head cut	0,000		
22	Maximum book height	130,000		
23	Default profile name	Default1		
24	Font size dimensioning in Print	Automatic		
25	Remains dimensioning	Disabled		

Available functions in the tool bar

Icon	Shortcut	Function description
	Ctrl + P	Print data set on VDU
	Ctrl + S	Save data set on VDU
	Ctrl + F4	Exit from the programming page

Additional functions

Consult the *"Using the keyboard"* section at the beginning of this manual.

Description of parameters

The first two columns indicate the reference to the parameter in the Single-blade saw and Angular saw program versions.

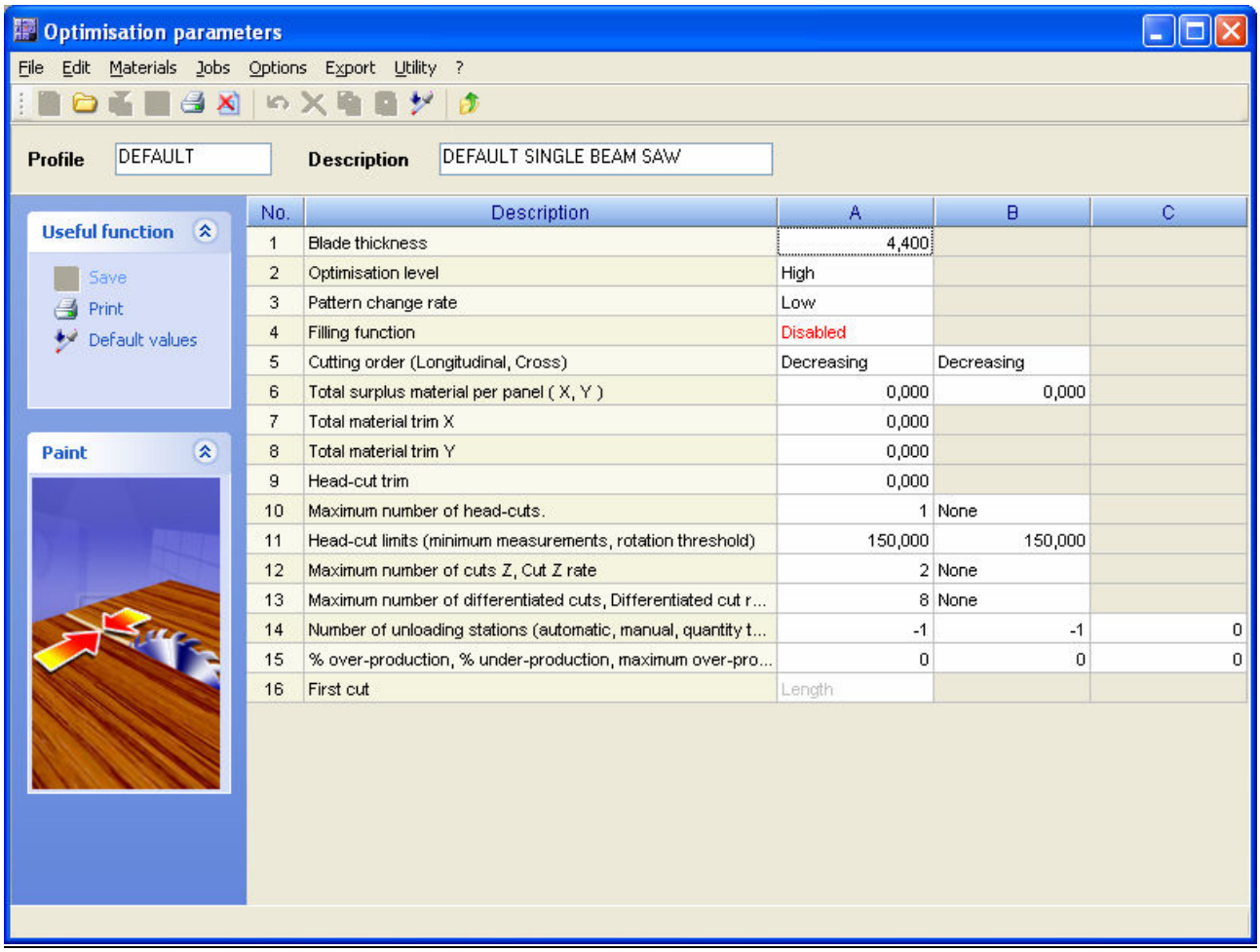
S	*A*	**Description**	Type	
1A	*1A*	Sets the name which is carried in the heading on all prints	String	25 characters
2A	*2A*	Sets the folder in which the files for import from text file are residing	String	80 characters
3A	*3A*	Sets the folder in which the bitmap files to be printed on the label are residing	String	80 characters
4A	*4A*	Sets the cost of the machine per unit of time (hour) in currency	Numerical	Min 0 Max 100,000,000
5A	*5A*	Enables/disables the function for compacting lines with same measurements in the panel lists (the compacted lines maintain distinct codes but are considered as one single panel for the purposes of sawing)	Option	
6A	*6A*	If parameter 5A is enabled, it sets the maximum difference in X between the measurements of two panels, to be able to compact the corresponding lines	Numerical	Min 0 mm Max 100 mm
6B	*6B*	If the parameter 5A is enabled, it sets the maximum difference in Y between the measurements of two panels, to be able to compact the corresponding lines	Numerical	Min 0 mm Max 100 mm
7A	*7A*	Enables/disables the function for identifying and automatically recycling waste recoverable as off-cuts. The determined off-cuts appear yellow inside the cutting patterns and may be loaded into the off-cuts stock using the command *Update stock*	Option	
8A	*8A*	If the parameter 7A is enabled, it sets the minimum measurement in X that waste may have to be recovered as off-cut	Numerical	Min 0 mm Max 6500 mm
8B	*8B*	If the parameter 7A is enabled, it sets the minimum measurement in Y that waste may have to be recovered as off-cut	Numerical	Min 0 mm Max 6500 mm
	9A	If the parameter 7A is enabled, it enables/disables the automatic empty head-cut insertion function if an off-cut can be recovered	Option	
9A	*10A*	Minimum length (X) for one panel	Numerical	Min 0 mm Max 15000 mm
9B	*10B*	Maximum length (X) for one panel	Numerical	Min 0 mm Max 15000 mm
10A	*11A*	Minimum width (Y) for one panel	Numerical	Min 0 mm Max 15000mm
10B	*11B*	Maximum width (Y) for one panel	Numerical	Min 0 mm Max 15000 mm
11A	*12A*	Minimum length (X) for a sheet or board in stock	Numerical	Min 0 mm Max 15000 mm
11B	*12B*	Maximum length (X) for a sheet or board in stock	Numerical	Min 0 mm Max 15000 mm
12A	*13A*	Minimum width (Y) for a sheet or board in stock	Numerical	Min 0 mm Max 6500 mm
12B	*13B*	Maximum width (Y) for a sheet or board in stock	Numerical	Min 0 mm Max 15000 mm
13A	*14A*	Minimum thickness for a material	Numerical	Min 0 mm Max 999 mm
13B	*14B*	Maximum thickness for a material	Numerical	Min 0 mm Max 999 mm

14A	*15A*	Minimum master head-cut limit. Minimum value under which no head-cut can be inserted	Numerical	Min 0 mm Max 6500 mm
14B	*15B*	Maximum head-cut limit. Maximum value over which no head-cut can be inserted	Numerical	Min 0 mm Max 6500 mm
	16A	Head cut type. Select the used type of head cut, on the right, on the left or on the right and left	Option	
15A	*17A*	Enables/disables the AB/BA function in program processing	Option	
16A	*18A*	Sets the maximum width for placing strips having the same cross cuts side by side	Numerical	Min 0 mm Max 6500 mm
17A	*19A*	Enables/disables the function for automatic association of all the off-cuts in the processing of multi-job lists: if enabled, all the off-cuts are automatically associated with the jobs during processing.	Option	
18A	*20A*	Enables/disables the automatic import of the grain flag from the material: if disabled, the grain is set manually for each panel	Option	
19A	*21A*	Sets the precision of display of the decimal figures of the dimensions	Numerical	Min 0 Max 3
20A		Enables/disables the use of different cuts in the rotated head-cut: if enabled, the rotated head-cut recycles may also have different cuts	Option	
21A		Defines the minimum logic cut for insertion at head	Numerical	Min 0 mm Max 6500 mm
	22A	Enables/disables the selection of the first side: if enabled, the first side of cutting may be selected in the optimization parameters	Option	
22A	*23A*	Maximum stack height	Numerical	Min 0 mm Max 6500 mm
23A	*24A*	Default profile name that is used for each new job.	String	25 characters
24A	*25A*	Defines the size of the font used for dimensioning in the printouts	Option	
25A	*26A*	Enables/disables dimensioning of the off-cuts	Option	
26A	*27A*	Enables/disables code management of the part in the patterns archive	Option	
27A	*28A*	Enables/disables automatic use of the pieces. If enabled all the pieces having the same color or same thickness or nil or empty color and thickness are added to the job.	Option	
28A	*29A*	Path for the job and multi-job files	String	256 characters
29A	*30A*	Path for the materials stock, pieces and patterns archive	String	256 characters
30A	*31A*	Enables/disables the possibility of the printout of every single pattern of every program at the end of the mlc report	Option	
31A	*32A*	Enables/disables recovery of the off-cuts with reversed dimensions in relation to the grain of the material	Option	

32A	*33A*	Selection of the mode for printing the measurements of the pieces: - **First piece only**: displays the measurements of a block of equal pieces - **All pieces**: displays the measurements in each single piece	Option
33A	*34A*	Selection of the mode for printing the measurements of the panels. - **Panel code**: displays the code of the pieces - **Panel index**: displays the index of the pieces - **None:** displays no code - **Label fields:** displays label value. The value is read in the position indicated in column B	Option
34A	*35A*	Enables/disables automatic unloading management	Option
35A	*36A*	Enables/disables automatic resizing of columns	Option

Optimization Parameters

This allows the optimizer configuration parameters to be programmed.
The page is also accessible using the shortcut keys *Ctrl+F7* and has the following layout:


Optimisation parameters
File Edit Materials Jobs Options Export Utility ?
Profile DEFAULT
Description DEFAULT SINGLE BEAM SAW
Useful function
Save
Print
Default values
Paint
No. Description A B C
1 Blade thickness 4,400
2 Optimisation level High
3 Pattern change rate Low
4 Filling function Disabled
5 Cutting order (Longitudinal, Cross) Decreasing Decreasing
6 Total surplus material per panel (X, Y) 0,000 0,000
7 Total material trim X 0,000
8 Total material trim Y 0,000
9 Head-cut trim 0,000
10 Maximum number of head-cuts. 1 None
11 Head-cut limits (minimum measurements, rotation threshold) 150,000 150,000
12 Maximum number of cuts Z, Cut Z rate 2 None
13 Maximum number of differentiated cuts, Differentiated cut r... 8 None
14 Number of unloading stations (automatic, manual, quantity t... -1 -1 0
15 % over-production, % under-production, maximum over-pro... 0 0 0
16 First cut Length

Available functions in the tool bar

Icon	Shortcut	Function description
		Open a configuration or associate a configuration with the active job
	Ctrl + P	Print data set on VDU
	Ctrl + S	Save data set on VDU
		Delete an existing configuration
		Reset parameter default values
	Ctrl + F4	Exit from the programming page

Additional functions

Refer to the *"Using the keyboard"* section at the beginning of this manual.

The display page is divided into two sections: the first, in the top part of the window, is the page heading and contains data for recognizing the configuration; the second, in the remaining part of the window, contains the configuration parameter programming table.
N.B. The configuration with the *Default* profile, set from the main program page is the one of reference that is loaded whenever a job is inserted to be optimized. In any case it is possible to insert new configuration profiles in the archive and, during programming, associate them with the jobs, also changing their data; in this case the writing *Custom* appears in the profile field of the configuration.

Heading fields

Profile: mnemonic code to be assigned to the configuration
Description: description to be assigned to the configuration

When the configuration page is opened with an active job, the following additional field appears at the top and contains the code of the same:

Optimization parameters

1A - Kerf: (min=0 - max=100): this is the thickness of the main blade (in general 4.4 mm). The program takes into account the kerf in determining the useful cutting area.

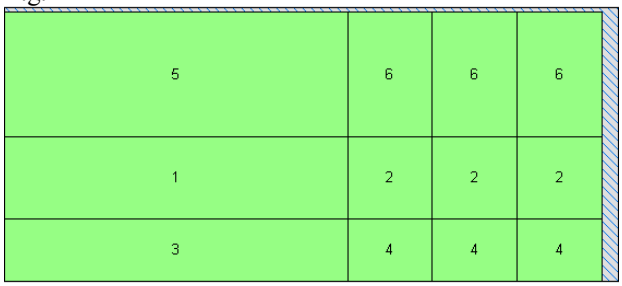
2A – Optimization level (low, high): selecting the *Low* level, the program explores few levels of solution; selecting the *High* level, the program carries out a greater number of optimization attempts, obviously taking more time for processing but in general giving more accurate solutions.

3A – Pattern change incidence: (none, low, medium, high) this indicates the incidence that the number of processed patterns has on the overall cost of the optimized cutting solution: the greater the incidence the fewer the number of patterns that the optimizer tends to do, even to the detriment of the off-cuts.
N.B. it is advisable to carry out several processing attempts by varying this parameter until reaching the best optimization result on the basis of one's own requirements.

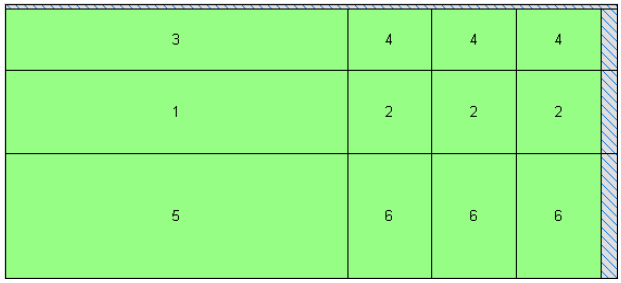
4A – Filling function: upon selecting this "Ottimo" option, it will eventually and automatically fill the unused parts (off-cuts) of the material boards with parts specially indicated by the user, as will be seen later (see Job programming), so as to minimize waste.
The parts that are used for this purpose should be present in the list with Qty. = 0 and Qty. Var. = nnn.
"nnn" is the maximum number of useable parts for filling.

5A – Order of longitudinal cuts (increasing, decreasing): this defines the arrangement (order) of the strips of the cutting pattern according to their width (from the narrowest to the widest or vice versa).

E.g.



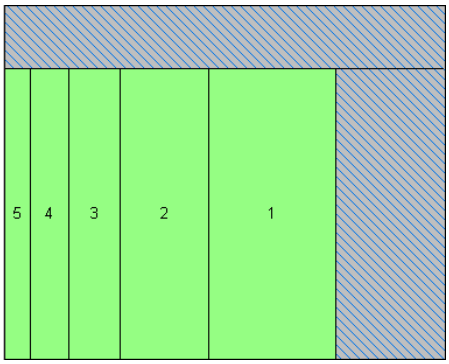
Increasing order



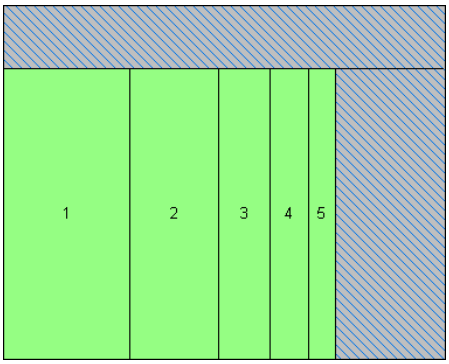
Decreasing order

5B – Order of cross cuts (increasing, decreasing): this defines the arrangement (order) of the panels in the strips of the cutting pattern according to their length (from the shortest to the longest or vice versa).

E.g.



Increasing order



Decreasing order

6A – Total surplus material per panel X (min=0 - max=3200): this is the quantity of material that is added to the length of the panels for machining after sawing (squaring, drilling etc.). If this value is set, for example, like the subsequent one (total surplus material Y) at a value of 10 mm, this means that "Ottimo" automatically adds 10 mm to the dimensions of the panels to be sawn compared to the finished ones set in the programming list for subsequent machining.

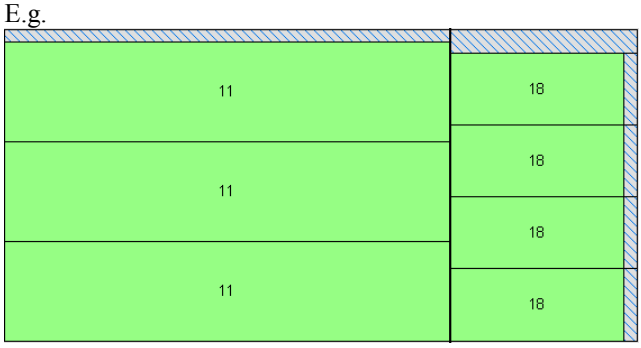
6B – Total surplus material per panel Y (min=0 - max=3200): this is the quantity of material that is added to the width of the panels for machining after sawing (squaring, drilling etc.). If this value is set, for example, like the subsequent one (total surplus material X) at a value of 10 mm, this means that "Ottimo" automatically adds 10 mm to the dimensions of the panels to be sawn compared to the finished ones set in the programming list for subsequent machining.

7A – Total trim X (min=0 - max=999.9): this is the quantity of total longitudinal trim on the material. The set quantity is detracted from the total length (X) of the material to determine the useable working length. How to manage the trim will be decided in the stage of transfer of the programs to the machine.

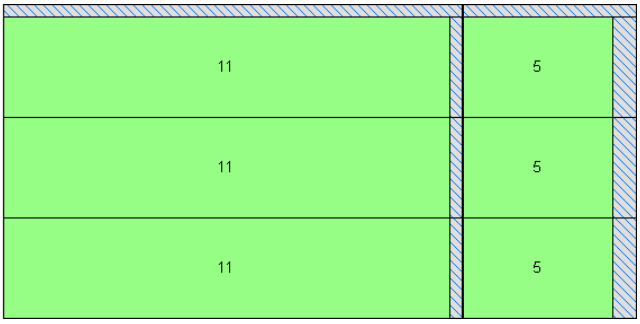
8A – Total trim Y (min=0 - max=999.9): this is the quantity of total cross trim on the material. The set quantity is detracted from the total width (Y) of the material to determine the useable working width. How to manage the trim will be decided in the stage of transfer of the programs to the machine.

9A – Head-cut trim (min=0 - max=999.9): this is the quantity of trim on the head-cut. The head-cut dimension is determined by the program in order to leave the set quantity of material between the last cross cut and the head cut. How to manage the trim will be decided in the stage of transfer of the programs to the machine.

E.g.



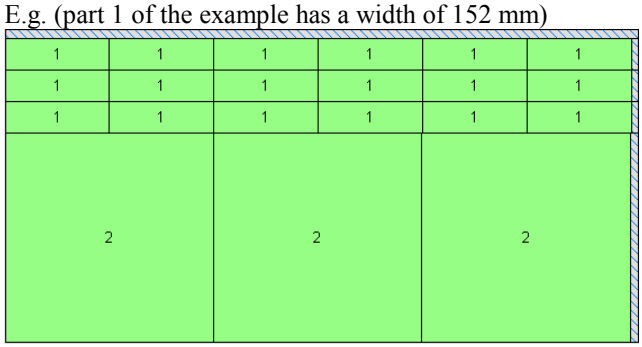
Head-cut trim = 0



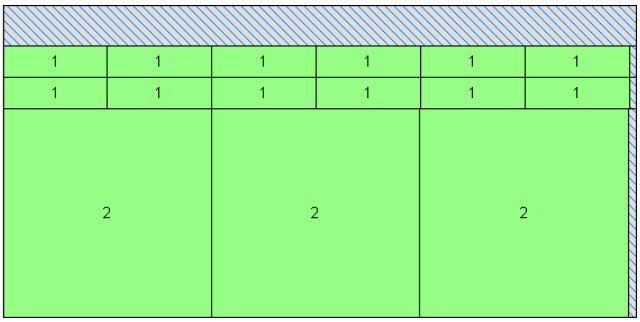
Head-cut trim = 80

10A – Strips coupled cut threshold (min=0 - max=6500): this defines the minimum height of the strips, below which they may only be present in even numbers. If 0, for example, is set for this value, it means that the number of strips to be cut for each cutting pattern is arbitrary; if this value is set at 120, for example, this means that the strips having a width below this value may only be inserted in even numbers in the cutting pattern.

E.g. (part 1 of the example has a width of 152 mm)



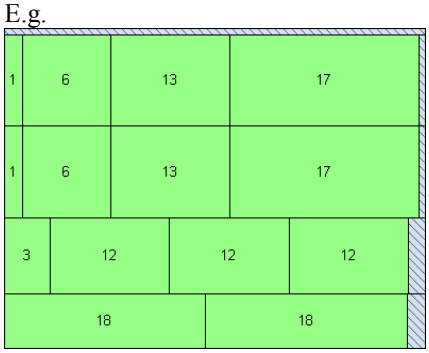
Strip coupled cut threshold = 0



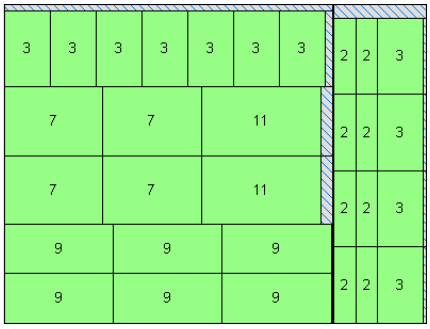
Strip coupled cut threshold = 200

11A – Maximum number of Head-cuts (min=0 - max=5 for single-blade saws, min=0 - max=1 for angular saws): maximum allowed number of head-cuts for each pattern.
N.B. If the maximum number of head-cuts is set at 1, the head cut is only inserted by the program in the second half of the sheet of material; if a higher number of head-cuts is instead set, the head cut may be inserted anywhere inside the useful area.

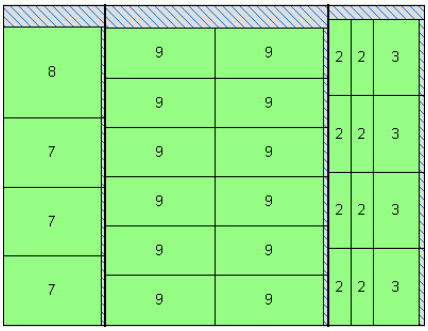
E.g.



Maximum number of head-cuts = 0



Maximum number of head-cuts = 1



Maximum number of head-cuts = 2

11B – Head-cut incidence (none, low, medium, high) this indicates the incidence that the number of head cuts made has on the overall cost of the optimized cutting solution: the greater the incidence, the fewer the head cuts that the optimizer tends to make, also to the detriment of the off-cuts.
N.B. it is advisable to process data several times by varying this parameter until the best optimization result is obtained according to one's requirements.

12A – Minimum head-cut measurement (min=0 - max=6500): this indicates the minimum size of the head-cut part.

12B – Head-cut rotation threshold (min=0 - max=6500): this indicates the value, starting from the ends of the panel, beyond which only a rotated head-cut may be inserted (the head-cut part is sawn with a rotation of 90 degrees); this value should be less than that set for the head cut.

Two cases should be distinguished for the two parameters *Minimum head-cut measurement* and *Head-cut rotation threshold* according to the type of panel saw:

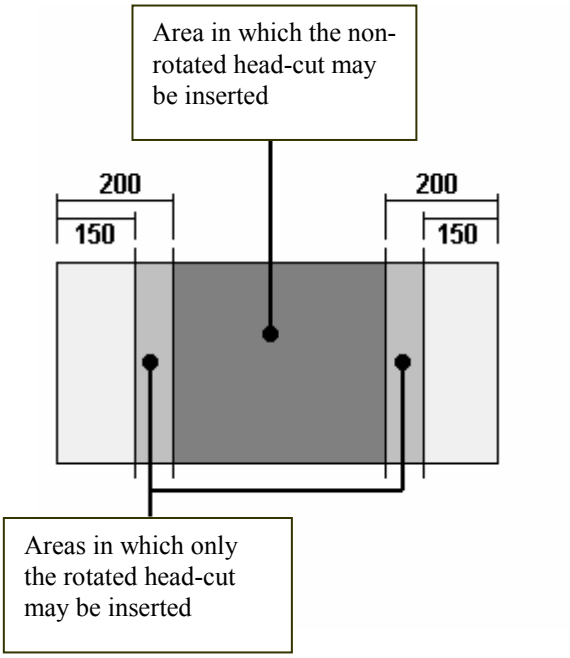
1) Single-blade saws:

Recommended values for all single-blade saws:

Minimum head-cut measurement: 150
Head-cut rotation threshold: 200

Head-cut rotation threshold (min=0 - max=6500): this indicates the dimension, starting from the ends of the panel, beyond which a rotated head-cut cannot be inserted; this value should not be less than that set for the head-cut, so that an area is defined within which the head-cut is only possible if rotated.

E.g.: *Minimum head-cut measurement* = 150
Head-cut rotation threshold = 200



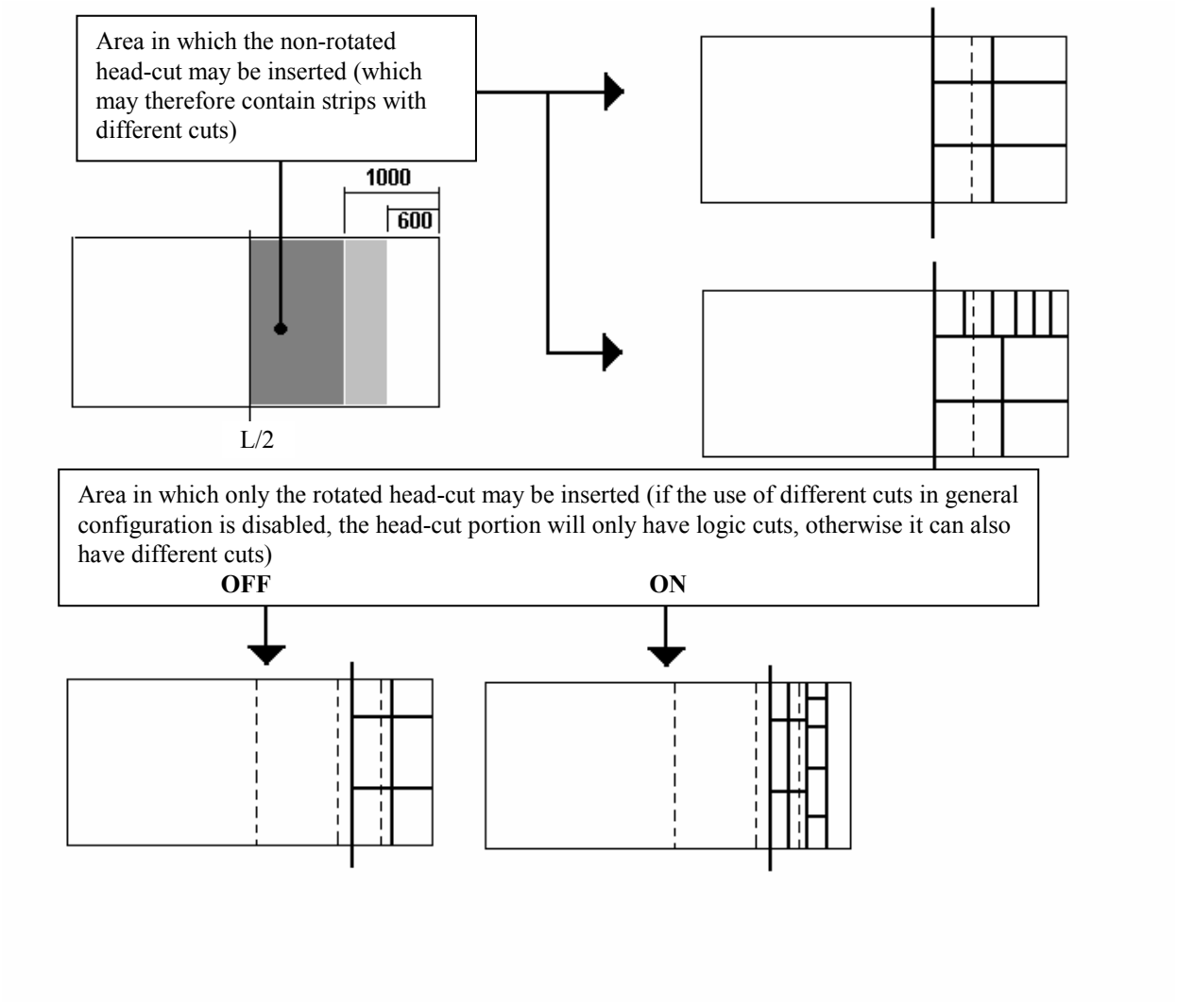
2) Angular saws

Minimum head-cut measurement (min=0 - max=6500): this indicates the value, starting from the end of the panel, beyond which a head-cut cannot be inserted.

Head-cut rotation threshold (min=0 - max=6500): this indicates the value, starting from the end of the panel, beyond which only the rotated head-cut may be inserted (the head-cut part is sawn with a rotation of 90°); this value should not be less than that set for the head-cut, so that an area is defined in which the head-cut is only possible if rotated. If the use if other cuts is enabled in general configuration, then the different cuts may be inserted in the rotated head-cut part.

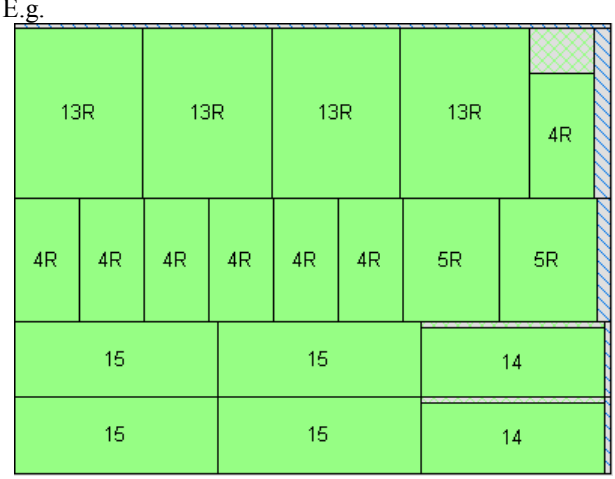
Example:

Minimum head-cut measurement: 600
Head-cut rotation threshold: 1000

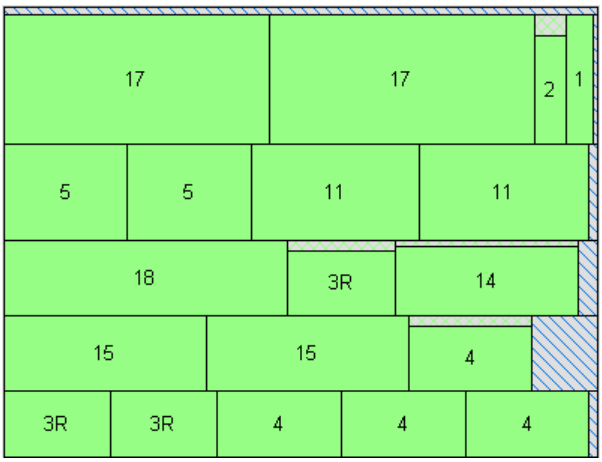

Area in which the non-rotated head-cut may be inserted (which may therefore contain strips with different cuts)
1000
600
L/2
Area in which only the rotated head-cut may be inserted (if the use of different cuts in general configuration is disabled, the head-cut portion will only have logic cuts, otherwise it can also have different cuts)
OFF
ON

13A – Maximum number of Z cuts (min=0 - max=100): maximum number of different Z cuts (fourth cutting level) that may be inserted into a cutting pattern.

E.g.



Head-cut trim = 0

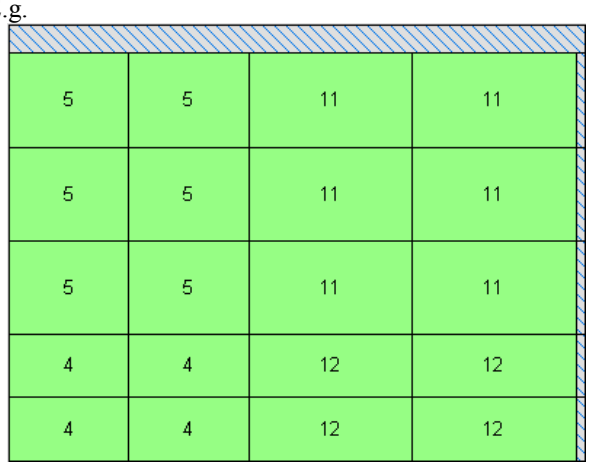


Head-cut trim = 80

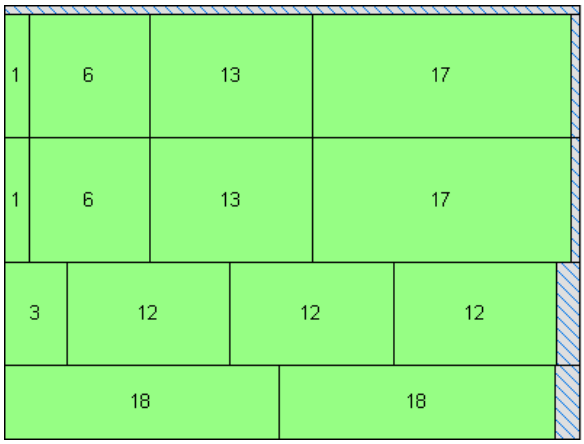
13B – Incidence of Z cuts (none, low, medium, high) this indicates the incidence that the number of Z cuts has on the overall cost of the optimized cutting solution: the greater the incidence the fewer the number of Z cuts that the optimizer tends to do, even to the detriment of the off-cuts.
N.B. it is advisable to carry out several processing attempts by varying this parameter until reaching the best optimization result on the basis of one's own requirements.

14A – Maximum number of differentiated cuts (min=0 - max=100): maximum number of different cuts for each portion (head-cut part) of the cutting pattern. A cut is considered as differentiated whenever the cross cuts (X) of a strip are different from those of the previous strip. Strips with the same cross cuts may generally be cut together.

E.g.



Number of differentiated cuts = 0



Number of differentiated cuts = 2

14B – Incidence of differentiated cuts (none, low, medium, high) this indicates the incidence that the number of differentiated cuts has on the overall cost of the optimized cutting solution: the greater the incidence the fewer the number of differentiated cuts that the optimizer tends to do, even to the detriment of the off-cuts.
N.B. it is advisable to carry out several processing attempts by varying this parameter until reaching the best optimization result on the basis of one's own requirements.

15A – Number of automatic unloading stations (min=-1 - max=50): number of automatic unloading stations; this indicates the number of panel stacks with management in the automatic mode open in any instant of machining. The parameter, also useful for managing from a post-processor module for controlling unloading, serves to prevent having a greater number of different parts coming simultaneously out of the saw than the number of available unloading stations. By setting the value –1, this indicates to the program that the number of automatic unloading stations is unlimited.
15B – Number of manual unloading stations (min=-1 - max=50): this is similar to the previous item, but with manual type unloading stations.

15C - A/M unloading threshold (min=0 - max=32767): this indicates the threshold, referred to the required quantity, which discriminates the unloading of a panel onto a manual or automatic roller unit. A part is unloaded manually if the number of workpieces required for the part is less than the value set in this field, otherwise the panel goes to a station with automatic unloading.

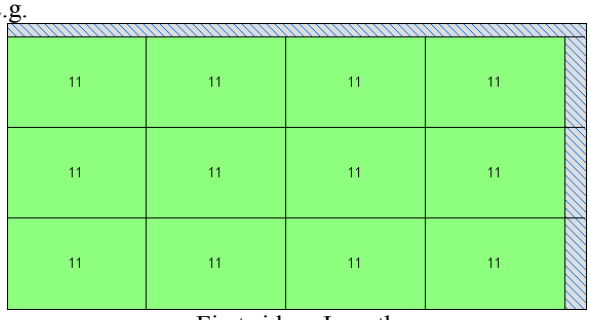
16A - % panel production surplus (min=0 - max=100): this is the percentage of extra pieces, compared to the set cutting program, that "Ottimo" may decide to produce in order to fill any unused spaces (to minimize waste).

16B - % panel underproduction (min=0 - max=100): this is the percentage of lacking parts, compared to the set cutting program, that "Ottimo" may decide not to produce in order to minimize waste.

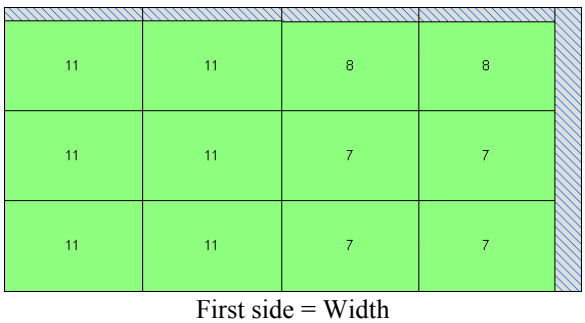
16C - % surplus production threshold (min=0 - max=32767): in the case of surplus production, the maximum number of extra parts to be produced is the highest number between this threshold and the % of production surplus. This allows an alignment of surplus production in the presence of required quantities in the same program that are very different.

Example of using parameters 16A, 16B and 16C:
Let's suppose we have two parts S1 and S2 to be made; for the first part (S1) a quantity of 10 pieces is required and for the second (S2) a quantity of 200 pieces. With just the percentage surplus production set at 10%, a maximum of 1 extra piece for S1 and 20 for S2 would be obtained.
In this case, with regard to waste, the variation in S1 would have no influence, while that of S2 would.
If in addition to the percentage parameter, the threshold parameter is set at 5 pieces, a maximum of 5 pieces for S1 would be obtained and a maximum of 20 pieces for S2.
If in addition to the percentage parameter, the threshold parameter is set at 10 pieces, a maximum of 10 pieces for S1 would be obtained and a maximum of 20 pieces for S2. In this way a more marked leveling is obtained between the minimum surpluses.

17A – First cut (Length, Width, Both): this indicates the direction of the first cut and consequently of all the others in the pattern. If "Both" is set, patterns with the first cut lengthwise and patterns with the first cut widthwise may both be obtained in the job.
E.g.



First side = Length

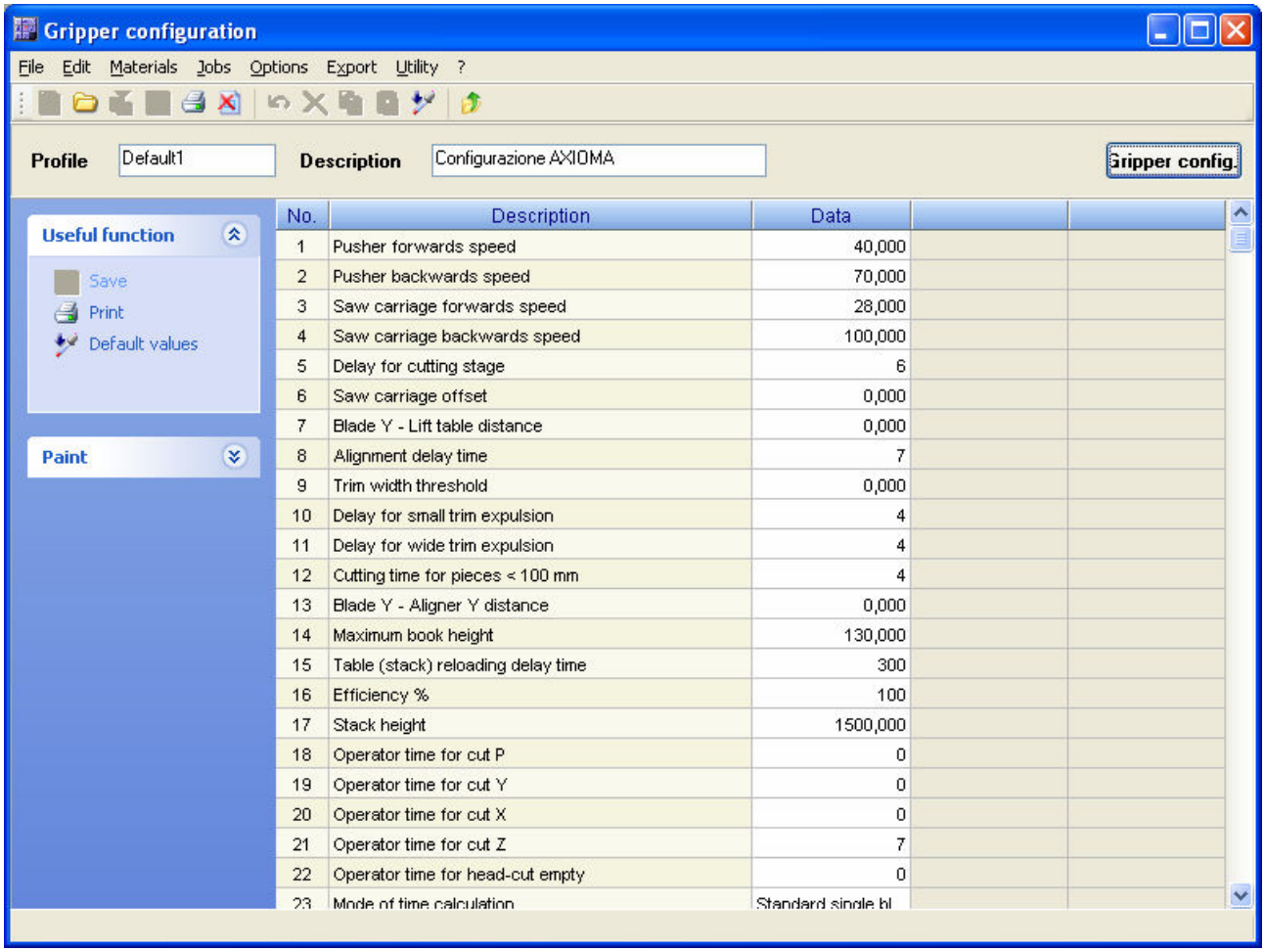


First side = Width

Time configuration

The display page allows certain machine parameters to be programmed by the operator. (REF. MACHINE DRAWING for the fields included between round brackets - Fig. T1).

Inserted data are necessary for the preliminary calculation of the cutting program execution times by the program (optional).
The page, protected by password, has the following layout


Gripper configuration
File Edit Materials Jobs Options Export Utility ?
Profile Default1
Description Configurazione AXIOMA
Gripper config.
Useful function
Save
Print
Default values
Paint
No. Description Data
1 Pusher forwards speed 40,000
2 Pusher backwards speed 70,000
3 Saw carriage forwards speed 28,000
4 Saw carriage backwards speed 100,000
5 Delay for cutting stage 6
6 Saw carriage offset 0,000
7 Blade Y - Lift table distance 0,000
8 Alignment delay time 7
9 Trim width threshold 0,000
10 Delay for small trim expulsion 4
11 Delay for wide trim expulsion 4
12 Cutting time for pieces < 100 mm 4
13 Blade Y - Aligner Y distance 0,000
14 Maximum book height 130,000
15 Table (stack) reloading delay time 300
16 Efficiency % 100
17 Stack height 1500,000
18 Operator time for cut P 0
19 Operator time for cut Y 0
20 Operator time for cut X 0
21 Operator time for cut Z 7
22 Operator time for head-cut empty 0
23 Mode of time calculation Standard single bl

Available functions in the tool bar

Icon	Shortcut	Function description
	Ctrl + P	Print data set on VDU
	Ctrl + S	Save data set on VDU
	Ctrl + F4	Exit from the programming page

N.B. For single-blade saws only column Y of the parameters is present, since there is only one cutting axis.

Additional functions

Refer to the section *"Using the keyboard"* at the beginning of the manual.

The display page is divided into two sections: the first, in the top part of the window, is the page heading and contains data for recognizing the configuration; the second, in the remaining part of the window, contains the configuration parameter programming table.

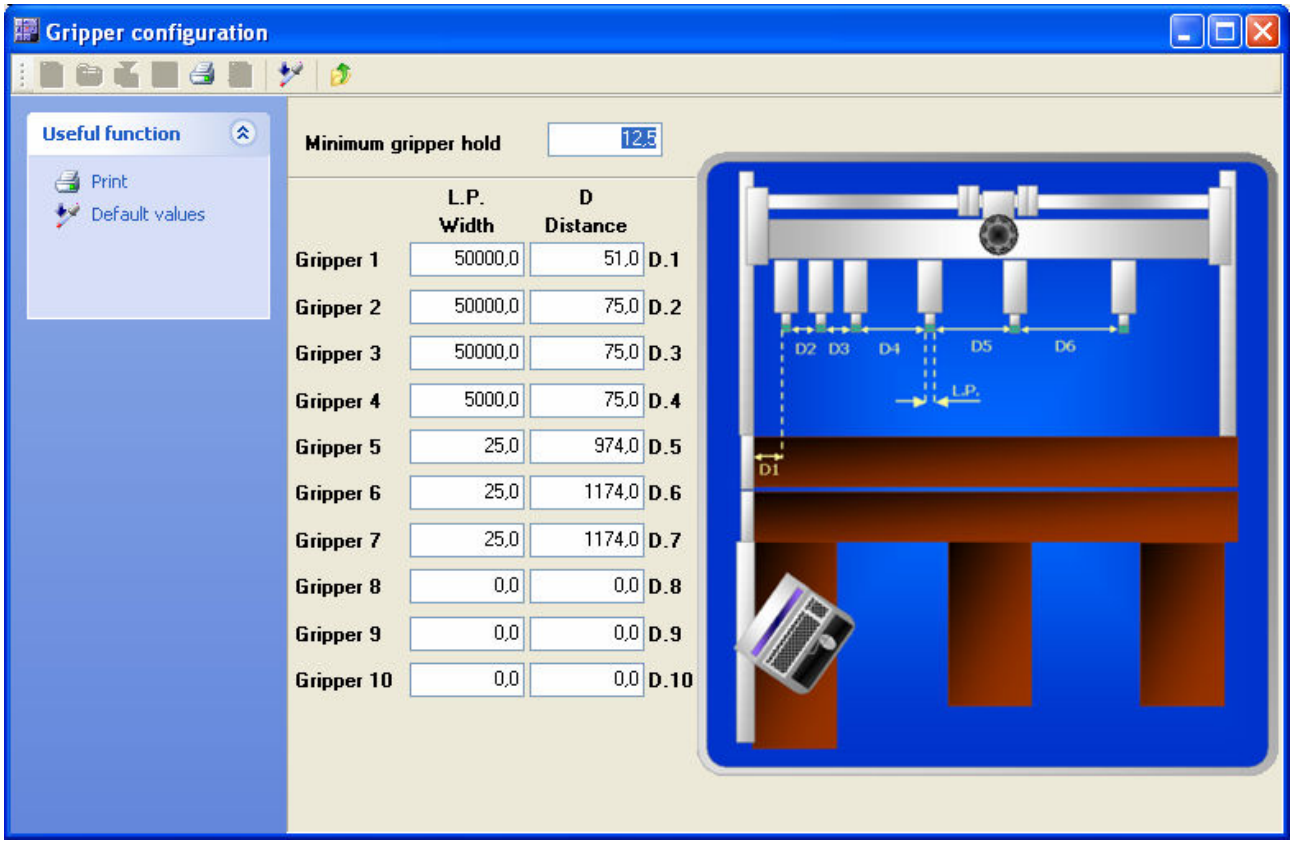
Working parameters

The firsts two columns are indicating the parameters references respectively for single-blade saw and angular saw.

A	*M*	Descrizione	Tipo	
1		**Angular mode. Head-cut type.** This indicates the head-cut mode of machining. The head-cut may be INTERNAL IN ADVANCE EXTERNAL INTERNAL WITH ROTARY TRANSFER	String	
2Y *2X* *2P*	*1*	**Pusher forward speed.**This defines the forward speed in meters per minute of the pusher. It serves to calculate the time for panel feed.	Numerical	Min 0 Max 6500
3X *3Y* *3P*	*2*	**Pusher backward speed.** This defines the return speed in meters per minute of the pusher. It serves to calculate the time for the return ready to take up the new stack.	Numerical	Min 0 Max 6500
4Y *4X* *4P*	*3*	**Saw carriage forward speed.** This defines the forward speed in meters per minute of the saw carriage.	Numerical	Min 0 Max 6500
5Y *5X* *5A*	*4*	**Saw carriage backward speed.** This defines the return speed in meters per minute of the saw carriage.	Numerical	Min 0 Max 6500
6Y *6X* *6P*	*5*	**Delay for cutting stage** This defines a dead time to be added for each cut (x, y or head-cut). **that is occupied by the activation of various mechanical devices during sawing**	Numerical	Min 0 Max 65000
7Y *7X* *7P*	*6*	**Saw carriage offset.** Dimension that is added to the effective cutting dimension.	Numerical	Min 0 Max 6500
8Y *8X* *8P*	*7*	**Blade– lift table distance.** This serves for the calculation of the time related to the first positioning of the stack. **(DZTELP) (DZTELY) (DZTELX)**	Numerical	Min 0
9Y *9X*	*8*	**Alignment time of y.** This is added for each stack of sheets to be cut in y and in x.	Numerical	Min 0 Max 65000
10Y *10X*	*9*	**Trim width threshold.** This is a parameter which serves as threshold for the parameters described below	Numerical	Min 0 Max 6500
11Y *11X*	*10*	**Delay for small trim expulsion.** This is added to each panel that has a smaller trim than the value set above.	Numerical	Min 0 Max 65000
12Y *12X*	*11*	**Delay for wide trim expulsion.** This is added to each panel that has a greater trim that the value set above.	Numerical	Min 0 Max 65000
13Y *13X*	*12*	**Pushing time for pieces smaller than 100 mm.** If the size of a piece is less than 100 mm, the pushing time is equal to this value.	Numerical	Min 0 Max 65000
14Y	*13*	**Blade - Aligner Y distance.** Blade – lift table y zero distance. **(DZLALY)**	Numerical	Min 0
15Y		**Blade X – Interference point Y distance** This serves to calculate the overlapping of cuts X and Y. **(DZLPIX)**	Numerical	Min 0
16Y		**Aligner Y – Head-cut piece pusher position.** Blade – initial position for head-cut piece pusher zero distance **(DZLPRE)**	Numerical	Min 0
17Y		**X alignment delay.** This is added to each X cut..	Numerical	Min 0 Max 65000

18Y	*14*	**Default max. stack – Max. stack for thin pcs – Thickness threshold for thin material**. The three parameters represent the maximum stack height, the maximum stack height with thin material and discriminant threshold for identifying the thin material**.**	Numerical	Min 0 Max 6500
19Y	*15*	**Stack reloading time.** This serves for calculating the overall working time. The overall time to change stack is obviously this time multiplied by the number of stacks.	Numerical	Min 0 Max 65000
20Y	*16*	**% efficiency.** The estimated total time is multiplied by the efficiency.	Numerical	Min 0 Max 100
21Y	*17*	**Stack height.** This serves to calculate how many stack changes are required for this program.	Numerical	Min 0 Max 6500
	18	**Operator time for cut P.** This is added on for each cut P and represents the time it takes for 1 operator to rotate and reload the piece produced by the cut.	Numerical	Min 0 Max 65000
	19	**Operator time for cut Y.** This is added on for each cut Y and represents the time it takes for 1 operator to rotate and reload the piece produced by the cut.	Numerical	Min 0 Max 65000
	20	**Operator time for cut X.** This is added on for each cut X and represents the time it takes for 1 operator to rotate and reload the piece produced by the cut.	Numerical	Min 0 Max 65000
22Y	*21*	**Operator time for cut Z.** This is added on for each cut Z and represents the time it takes for 1 operator to rotate and reload the piece produced by the cut.	Numerical	Min 0 Max 65000
	22	**Operator time for empty head cut.** This is added on for each head cut without recycle and represents the time it takes 1 operator to unload the head cut.	Numerical	Min 0 Max 65000
	23	**Mode of times calculation.** In the “Longitudinal cuts only” mode, the total time only takes into consideration the time needed to carry out the Y cuts	String	80 Chars
23Y	*24*	**Maximum length** Maximum length of the stock format. In the TOP or PLUS keys this parameter is considered an optimization control, while in the other types of key (BASE, MEDIUM) the maximum length of the stock format set in the general configuration is considered as the parameter.	Numerical	Min 0 Max 10000
23Y	*25*	**Maximum width** Maximum width of the stock format. In the TOP or PLUS keys this parameter is considered an optimization control, while in the other types of key (BASE, MEDIUM) the maximum width of the stock format set in the general configuration is considered as the parameter.	Numerical	Min 0 Max 10000
	26	**No. cycles suction cup loading** Number of cycles per minute that can be done by the loader	Numeric	Min 0 Max 10000
	27	**Handling time: reference stack (in mm) - Incremental factor** Assessment of operator time for cuts P,Y,X,Z	Numeric	Min 0 Max 65000
	28	**Type of Loading** Selection of FRONT / REAR loading	String	
	29	**Sheet (small, medium, large) front loading time** Time required for front loading of the various sizes	Numeric	Min 0 Max 65000
	30	**Loading time: Reference stack (in mm) - Incremental factor** Assessment of operator time for front loading	Numeric	Min 0 Max 65000
	31	**Handling time: Reference stack (in mm) - Incremental factor** Assessment of time	Numeric	Min 0 Max 65000
	32	**Rotary transfer: Presence of table – Rotation time** It identifies the presence of the rotary transfer and its time of rotation respectively	Numeric	Min 0 Max 65000

In the Single-blade program version, the time configuration has an extension for configuration of the positions and dimensions of the grippers.



With this configuration the time calculation can check that the strips are side by side and where they are not, give a warning.

The parameters defined in the gripper configuration are:

1. **Minimum gripper hold.** This indicates the minimum support that the strip must have on a gripper; if the strip does not rest on this minimum area, it cannot have a side-by-side placement.
2. **Width.** This is the width of the gripper in millimeters.
3. **Distance from guide.** This is the distance in millimeters from the guide to the edge of the first gripper; if the first strip is smaller than this measurement, the pattern cannot be executed.
4. **Distance from the previous gripper.** This is the distance between the edge of a gripper and the previous one. In order for a strip lying between 2 grippers to be placed side by side with another, it must be held by both grippers or be held beyond the halfway point by the second gripper, in both cases complying with the first parameter.

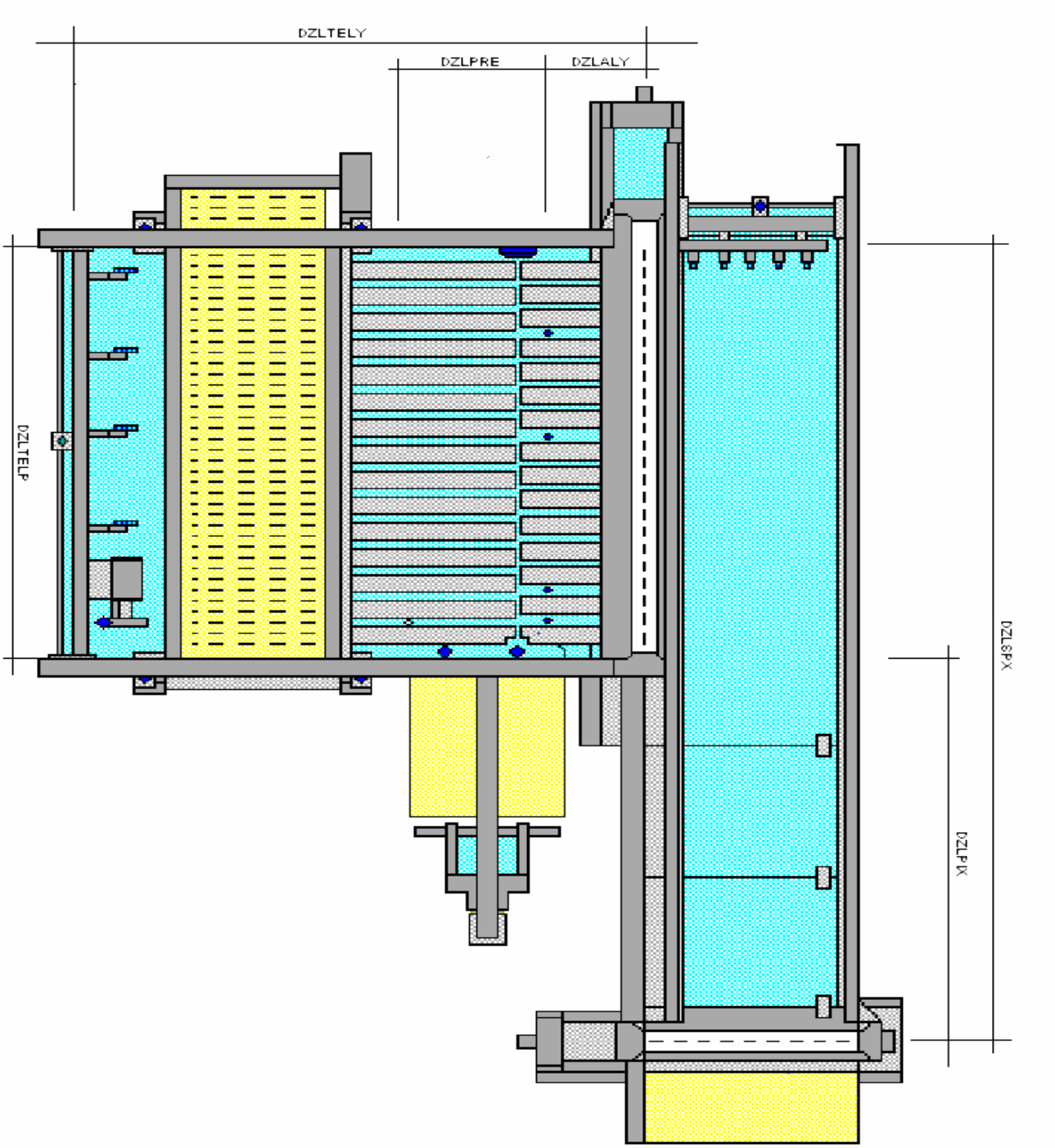
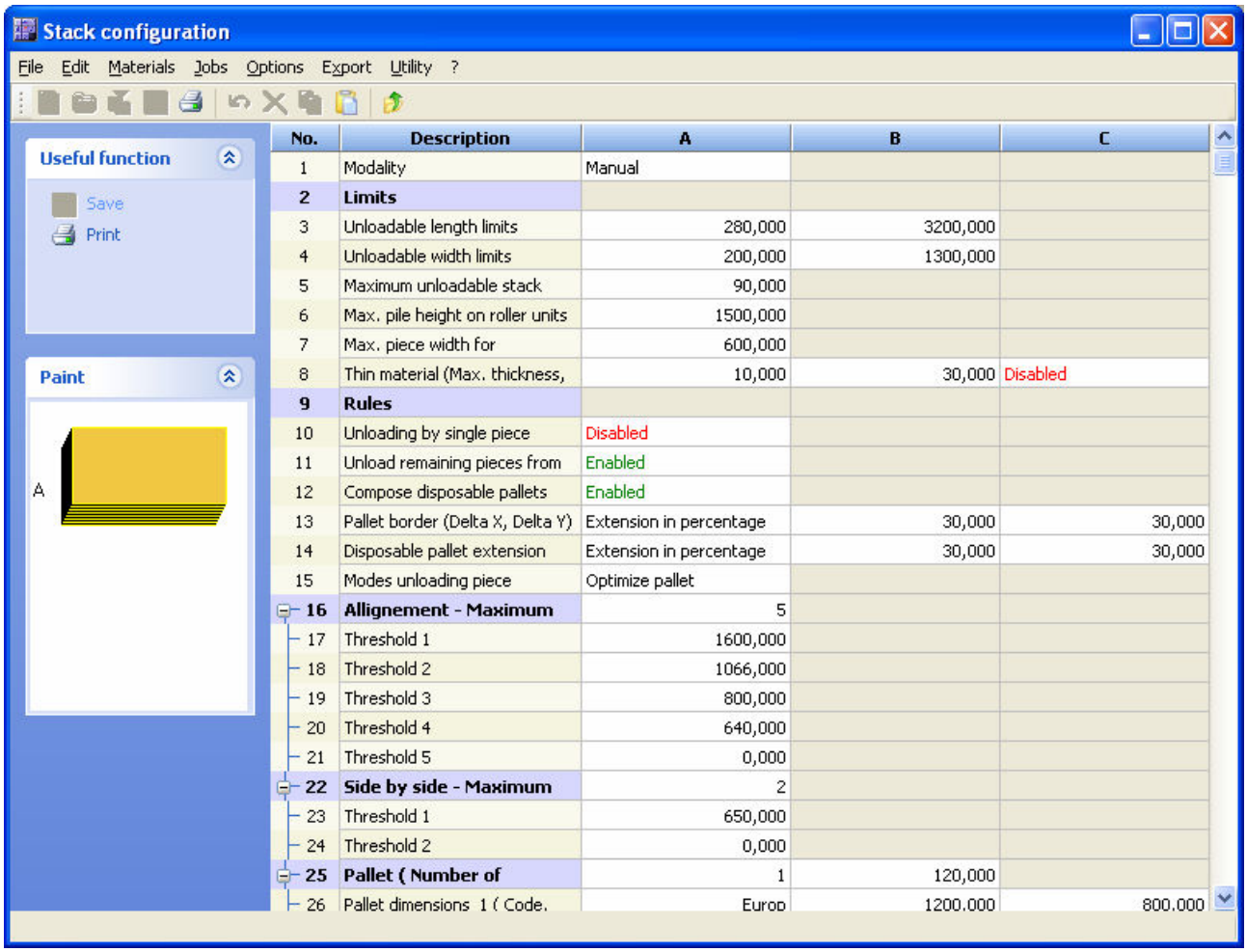


Fig. T1 – References to the parameters for calculation of the times

Unloading configuration

The display page allows the cut panels unloading configuration parameters to be programmed.
The page has the following layout:


Stack configuration
File Edit Materials Jobs Options Export Utility ?
Useful function
Save
Print
Paint
A
No. Description A B C
1 Modality Manual
2 Limits
3 Unloadable length limits 280,000 3200,000
4 Unloadable width limits 200,000 1300,000
5 Maximum unloadable stack 90,000
6 Max. pile height on roller units 1500,000
7 Max. piece width for 600,000
8 Thin material (Max. thickness, 10,000 30,000 Disabled
9 Rules
10 Unloading by single piece Disabled
11 Unload remaining pieces from Enabled
12 Compose disposable pallets Enabled
13 Pallet border (Delta X, Delta Y) Extension in percentage 30,000 30,000
14 Disposable pallet extension Extension in percentage 30,000 30,000
15 Modes unloading piece Optimize pallet
16 Allignement - Maximum 5
17 Threshold 1 1600,000
18 Threshold 2 1066,000
19 Threshold 3 800,000
20 Threshold 4 640,000
21 Threshold 5 0,000
22 Side by side - Maximum 2
23 Threshold 1 650,000
24 Threshold 2 0,000
25 Pallet (Number of 1 120,000
26 Pallet dimensions 1 (Code. Europ 1200.000 800.000

Available functions in the tool bar

Icon	Shortcut	Function description
	Ctrl + P	Print the data set on the VDU
	Ctrl + S	Save the data set on the VDU
	Ctrl + F4	Exit from the programming page

Additional functions

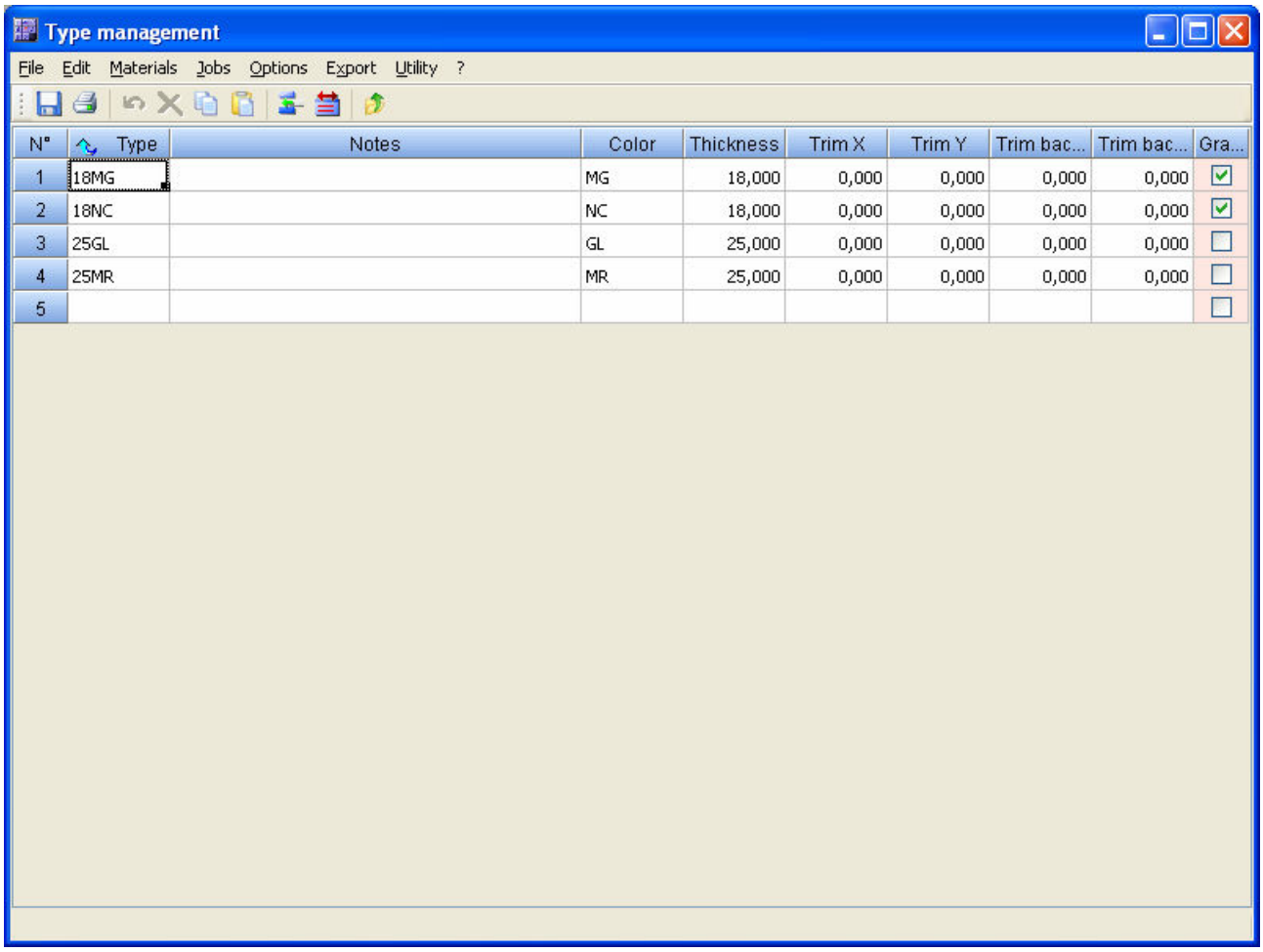
Consult the *"Using the keyboard"* section at the beginning of this manual.

Description	Type	
Mode: Indicates the cell unloading mode: Manual or Automatic	String	
Limits		
Unloadable length limit (Minimum workpiece, Maximum composition): *Minimum workpiece*: identifies the minimum length of the workpiece so that it can be unloaded by unloader. Below this value the workpiece is unloaded manually. *Maximum composition*: identifies the maximum length of the composition that may be unloaded by the unloader. If the total length of the composition is greater than the parameter, the machine goes into the manual unloading mode	Numerical	Greater than zero
Unloadable width limits (Minimum workpiece, Maximum composition): *Minimum workpiece*: identifies the minimum width of the workpiece so that it can be unloaded by unloader. Below this value the workpiece is unloaded manually. *Maximum composition*: identifies the maximum width of the composition that may be unloaded by the unloader. If the total width of the composition is greater than the parameter, the machine goes into the manual unloading mode	Numerical	Greater than zero
Maximum unloadable stack height Height that the stack may reach during unloading.	Numerical	Greater than zero
Maximum height of pile on roller units Height that the pile may reach in the roller units. The real pile height may exceed the maximum set for a stack height.	Numerical	Greater than zero
Max. workpiece width for side-by-side unloading Maximum width of the workpiece for placing side by side during unloading	Numerical	Greater than zero
Thin material (Max. thickness, Minimum stack height, unloading by unloader)		
- *Max. thickness*: value below which the material is considered as thin	Numerical	Greater than zero
- *Minimum stack height*: minimum stack height to be prepared so that it can be unloaded by unloader. A stack below the minimum height, coming from the panel saw, must be stacked with others until the minimum is reached for unloading; where impossible it is unloaded in the manual mode	Numerical	Greater than zero
- *Unloading by unloader*: enables the unloading of the material by the unloader; if disabled, all the pieces of thin material are unloaded in the manual mode (light blue)	Option	
Rules		
Unloading by single piece Enables/disables unloading of one piece at a time	String	
Unloading of remaining workpieces by unloader Enables/disables unloading of incomplete compositions by unloader. When a workpiece must be unloaded in 3x1 and there are 31 pieces to be unloaded, if this parameter is enabled the last piece is unloaded on top of the pile.	Option	
Compose throwaways Enables/Disables the composition of throwaway panels	Option	
Pallet overhang (Data item type, Delta X, Delta Y) quantity in X and Y of pallet overhang		
- *Data item type:* indicates how the pallet overhang of the composition is considered. Absolute: absolute value in mm of how much pallet overhang there can be Percentage: percentage value to be calculated on the workpiece size.	String	
- *Delta X:* on the basis of the value of *"Data item type"*, Delta X is how much a workpiece may overhang side X of the pallet	Numerical	Greater than zero
- *Delta Y:* on the basis of the value of *"Data item type"*, Delta Y is how much a workpiece may overhang side Y of the pallet	Numerical	Greater than zero
Throwaway overhang (Data item type, Delta X, Delta Y) quantity in X and Y of pallet overhang		
- *Data item type:* indicates how the pallet overhang of the composition is considered. Absolute: absolute value in mm of how much pallet overhang there can be Percentage: percentage value to be calculated on the workpiece size.	String	
- *Delta X:* on the basis of the value of *"Data item type"*, Delta X is how much a workpiece may overhang the crosswise side of the pallet	Numerical	Greater than zero
- *Delta Y:* on the basis of the value of *"Data item type"*, Delta Y is how much a piece may overhang side Y of the pallet	Numerical	Greater than zero

Workpiece unloading mode Identifies the unloading mode - *As in list:* calculates the unloading composition considering the workpiece as being unloaded in the direction of the length programmed in list - *Long side:* calculates the unloading composition considering the workpiece as being unloaded from its longest side. - *Rotate if necessary:* the calculation is made in two stages *a)* Calculation of the unloading composition considering the piece as being unloaded as programmed. *b)* If the piece as programmed cannot be unloaded by the unloader because the dimensions are outside the unloading limits, the calculation is redone by rotating the workpiece at unloading. - *Rotate if unloading several pieces:* the calculation is made in three stages. - *a)* Calculation of an unloading composition considering the workpiece as programmed in list. - *b)* Calculation of an unloading composition considering the piece rotated *c)* Choosing between *a* and *b* the composition that unloads more pieces. - *Optimize pallet:* if throwaways have been configured and the parameter *"Compose throwaways"* is activated, the calculation is the same as in the previous point "*Rotate if unloading several pieces*", otherwise it calculates the composition, also by rotating the piece, that unloads most pieces on just one pallet or throwaway among those configured	String	
Alignment – Maximum number of alignments: number of possible thresholds. By varying this number or varying the maximum length (limits), the threshold values are automatically recalculated upon request by the operator.	Numerical	Greater or equal than zero
nth value threshold: alignment thresholds are displayed. The threshold must have a value so that upon aligning the workpiece n times, the total length does not exceed the maximum length	Numerical	Greater or equal than zero
Side by side – Maximum number of side-by-side pieces: number of possible thresholds for putting workpieces side by side. By varying this number or varying the maximum width (limits), the threshold values are automatically recalculated upon request by the operator.	Numerical	Greater or equal than zero
nth value threshold: side-by-side thresholds are displayed. The threshold must have a value so that upon putting the workpiece side by side n times, the total width does not exceed the maximum width	Numerical	Greater or equal than zero
Pallet (Number of different formats, Thickness) number of available formats (max 5) and thickness, which must be common to all		
- Number of formats: number of pallets	Numerical	Greater or equal than zero
- **Thickness**: thickness of pallet	Numerical	Greater than zero
Size (Code, Length, Width) nth pallet: definition of identity of nth pallet.		
Throwaways (Number of different formats, Thickness) number of available formats (max 5) and thickness, which must be common to all		
- Number of formats: Number of throwaways	Numerical	Greater or equal than zero
- **Thickness**: thickness of throwaways	Numerical	Greater than zero
Size (Code, Length, Width) nth pallet: definition of identity of nth throwaways.		
Variable stack height – Maximum number: number of possible width thresholds for stack height	Numerical	Greater or equal than zero
nth value threshold (Workpiece width – Stack height): For each workpiece the height of the stack depends on its width. A pair with width 500, height 1200 therefore means that the stack height for workpieces less than 500 in width (up to lower threshold) will have a maximum stack height 1200	Numerical	Greater or equal than zero

Type Management

This section illustrates the available functions for managing the various types of material.
The programming page of the types archive is accessible from the Types Management item from the main menu.
The page layout is as follows:


Type management
File Edit Materials Jobs Options Export Utility ?
N° Type Notes Color Thickness Trim X Trim Y Trim bac... Trim bac... Gra...
1 18MG MG 18,000 0,000 0,000 0,000 0,000
2 18NC NC 18,000 0,000 0,000 0,000 0,000
3 25GL GL 25,000 0,000 0,000 0,000 0,000
4 25MR MR 25,000 0,000 0,000 0,000 0,000
5

Available functions in the tool bar

Icon	Shortcut	Function description
		Print data related to the displayed types
		Save data set on the VDU, existing data are overwritten
	Ctrl + X	Delete the selected lines of the table (in blue)
	Ctrl + C	Copy the selected lines of the table (in blue)
	Ctrl + V	Paste at the end of the table (append) the previously copied lines
		Insert a line above the selected line
		Set the table columns with a fixed width. Activation of the button depends on the general configuration
	Ctrl + F4	Exit from the programming page

Additional functions

Consult the *"Using the keyboard"* section at the beginning of this manual.

By double clicking in the first top left cell of the table, the table columns are resized so that all the columns are visible on the display page.
By clicking on the heading of a column, the entire list of types may be put in increasing or decreasing order according to the order of the selected column.

Description of Types programming table fields

Type: **max 20 characters**
Mnemonic code of the type.

Notes: **max 50 alphanumeric characters**
Notes on the type. The field may be left empty

Color: **max 8 characters**
Mnemonic code of the color; this identifies the color of the type of a material.

Thickness: **min = 0** **max = 100**
Thickness of the type of a material

Trim X: **min = 0** **max = 999.9**
Quantity of material to be trimmed at head widthwise

Trim Y: **min = 0** **max = 999.9**
Quantity of material to be trimmed at head lengthwise

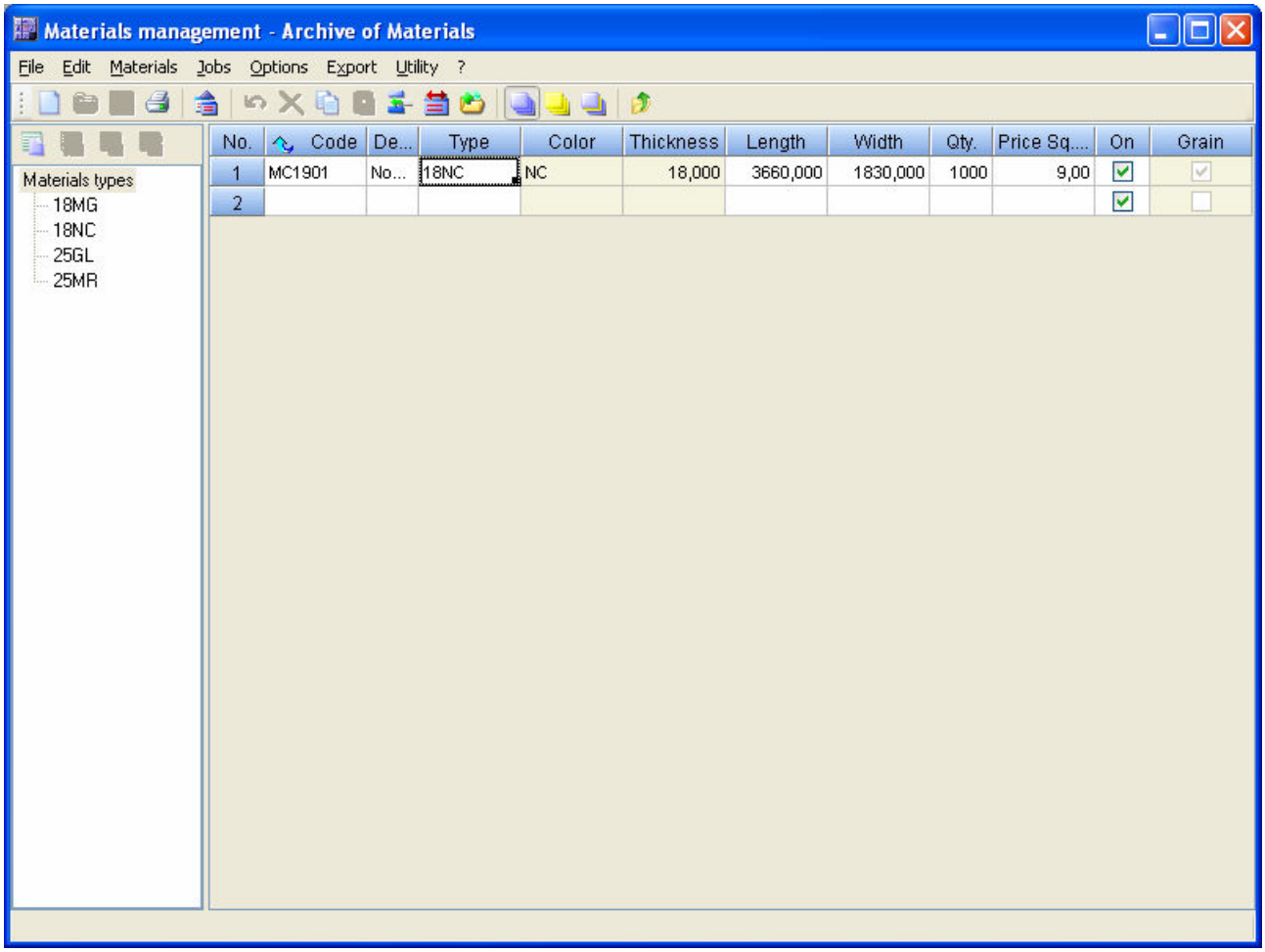
Tail Trim X: **min = 0** **max = 999.9**
Quantity of material to be trimmed at tail widthwise

Tail Trim Y: **min = 0** **max = 999.9**
Quantity of material to be trimmed at tail lengthwise

Grain:
Enables/disables the grain on the type being considered

Materials Management

This section illustrates the available functions for the operator to manage the archive of materials and off-cuts. For the description of the functions to associate the materials with the jobs to be optimized and for automatic updating of the archive with regard to the materials used and to the off-cuts generated by the machining, refer to sections *Job Management* and *Multi-job Management* (Optional).
The programming page of the materials and off-cuts stock is accessible from the *New* and *Open* items in the *Materials* menu or using the shortcut keys F6 or Shift+F6.
There are consequently two methods of access: with *New* the cursor is positioned on the first empty line of the programming table for insertion, with *Open* the cursor is positioned on the first element of the table. In both cases the displayed page consists of a list of types on the left and a table on the right. Upon selecting a type, all the materials having that type of selected stock are displayed; if the item "*Material Type*" is selected in the types list, all the materials of all the types of selected stock are displayed.
The materials and off-cuts archive programming page layout is as follows:


Materials management - Archive of Materials
File Edit Materials Jobs Options Export Utility ?
Materials types
18MG
18NC
25GL
25MR
No. Code De... Type Color Thickness Length Width Qty. Price Sq.... On Grain
1 MC1901 No... 18NC NC 18,000 3660,000 1830,000 1000 9,00
2

N.B. Each time the *Materials Management* page is accessed, the list is put in order by increasing codes; to scroll the entire list, use the vertical scroll bar located on the right-hand margin of the page.

Functions available for material type management

Icon	Shortcut	Function description
		Insert a type
		Preview of type present
		Dolete type select
		Edit select type

Available functions in the tool bar

Icon	Shortcut	Function description
	F6	Position the cursor on the first cell of the first empty line
		Save data set on the VDU, existing data are overwritten
		Print data related to the displayed materials
		Export materials of the selected stock into text file
	Ctrl + X	Delete the selected lines of the table (in blue)
	Ctrl + C	Copy the selected lines of the table (in blue)
	Ctrl + V	Paste at the end of the table (append) the previously copied lines
		Insert a line above the selected line
		Set the table columns with a fixed width. Activation of the button depends on the general configuration
		Facilitated material data insertion
		Selective display of materials, off-cuts or the whole stock.
	Ctrl + F4	Exit from the programming page

Additional functions

Refer to the section *"Using the keyboard"* at the beginning of this manual.

By double clicking in the first top left cell of the table, the table columns are resized so that all the columns are visible on the display page.

Click on the heading of a column (except for type and grain) to put the whole materials list in increasing or decreasing order according to the order of the selected column.

Description of programming table fields

Code: **max 20 alphanumeric characters**
Mnemonic code of the material.

Description: **max 50 alphanumeric characters**
Description of the material (it may be displayed during job programming as aid for association of the material). The field may be left empty.

Type
Material type. By selecting this field, also information related to the color and thickness is displayed.

Off-Cut:
Definition of material type: ☐ the material is not an off-cut, ☑ identifies that the material is an off-cut. I resti associati alle commesse vengono utilizzati per primi in lavorazione in quanto sono inseriti con la più alta priorità di utilizzo.

Color
Color of the selected type. This field cannot be changed.

Thickness
Thickness of the selected type. This field cannot be changed.

Length: **min = 100** **max = 6500**
Length of the material (grain side)

Width: **min = 100** **max = 6500**
Width of the material.
N.B.: the limits for length and width may be set in general configuration through the respective parameters "*Length/Width for format in stock*"

Thickness: **min = 1** **max = 100**
Thickness of the material.

Quantity: **min = -1** **max = 32767**
No. of available sheets in stock for the material; if set on –1, this means unlimited availability, if a value is set between 0 and 32767, the algorithm controls the availability. In the event of insufficient stock, a message is emitted and no solution is supplied.

Price per sq.m: **min = 0** **max 1.000.000**
Cost of the material per square meter in currency. The value is used to calculate the item *Cost of the material* of the optimized jobs.

Original material: **max 20 characters alphanumeric characters**
This is managed automatically by the program or manually by the operator, but only for the off-cuts. It is the code of the material whose machining has generated the off-cut. The field may be left empty.

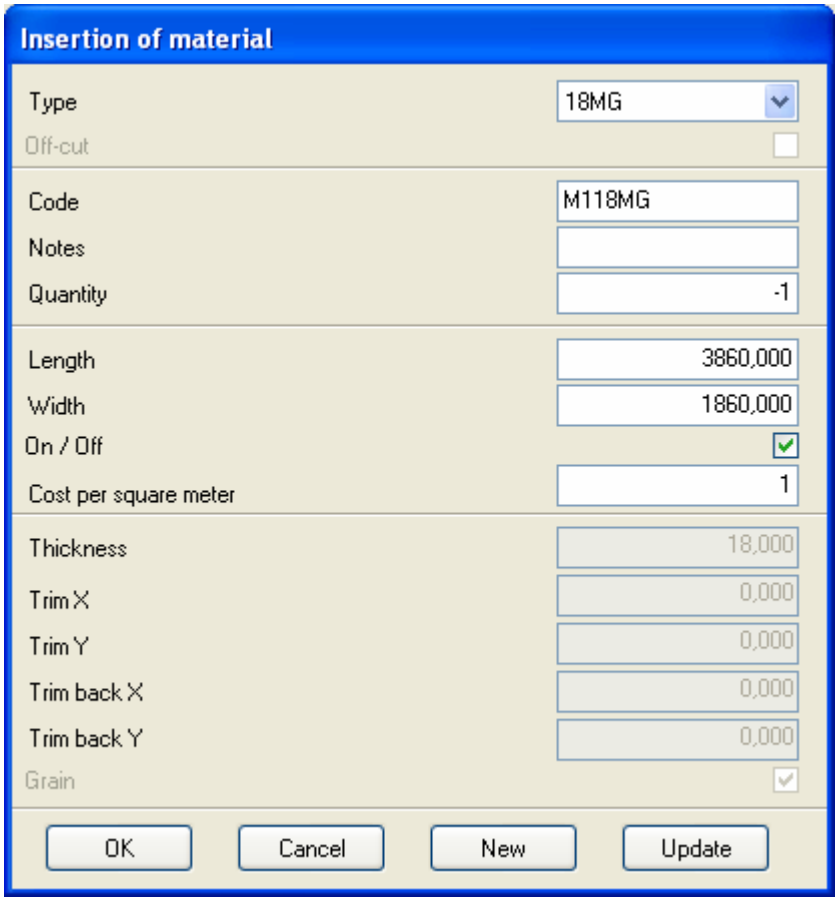
On:
☑ Enables / ☐ disables use of the panels in the optimizations

Grain:
This is the field that contains the information on the material grain: if the corresponding cell is selected (=1) the material is grained, otherwise (=0) the material is not grained. Information on the grain of the material may be automatically transferred to all the parts of a list where the materials are being associated if the option *automatic import of the grain flag from the material* of the general configuration is enabled.

Grain:
This is the field that contains the information on the material grain: if the corresponding cell is selected ☑ the material is grained, otherwise ☐ the material is not grained. Information on the grain of the material may be automatically transferred to all the parts of a list where the materials are being associated if the option *automatic import of the grain flag from the material* of the general configuration is enabled. During the association of the materials with a job, all the boards having the same type for the panel list to be produced are sought During the association of the materials with a job, all the boards having the same type for the panel list to be produced are sought.

Additional functions

The window for facilitated insertion of the materials may be opened through the toolbar function for material insertion. The window appears as follows:



Description of buttons:

OK: add a material with the inserted values and return to the materials programming page

Undo: return to the programming page without inserting any material

New: delete all fields present

Update: add a material with inserted values and delete the code field without exiting from the window; this allows insertion of a new material with characteristics similar to the previous one without having to reinsert all the data.

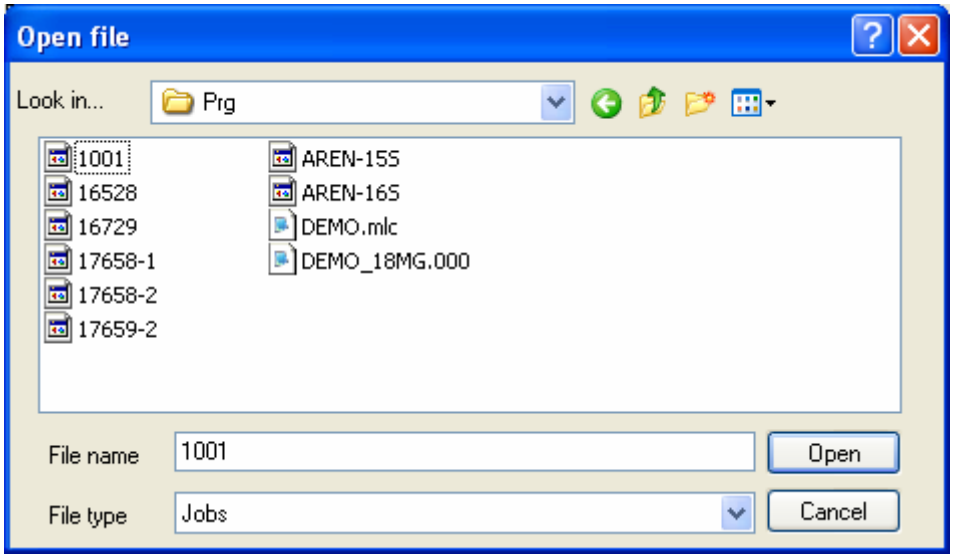
Job management

This section illustrates the available functions for programming and managing the jobs for which the cutting plans are to be optimized. In addition to the programming of data related to the jobs, the functions of print, import from file of formatted text, copy and erase jobs in the archive functions are available, as well as optimization and statistical reports of the cutting data.
The operations for optimizing job data should be carried out in the following order:

1. Programming data related to the heading and the parts of the job (compulsory);
2. Associating one or more formats of materials or off-cuts with the job (compulsory);
3. Editing the default optimization parameters of the job (optional);
4. Optimizing the cutting plans (compulsory).

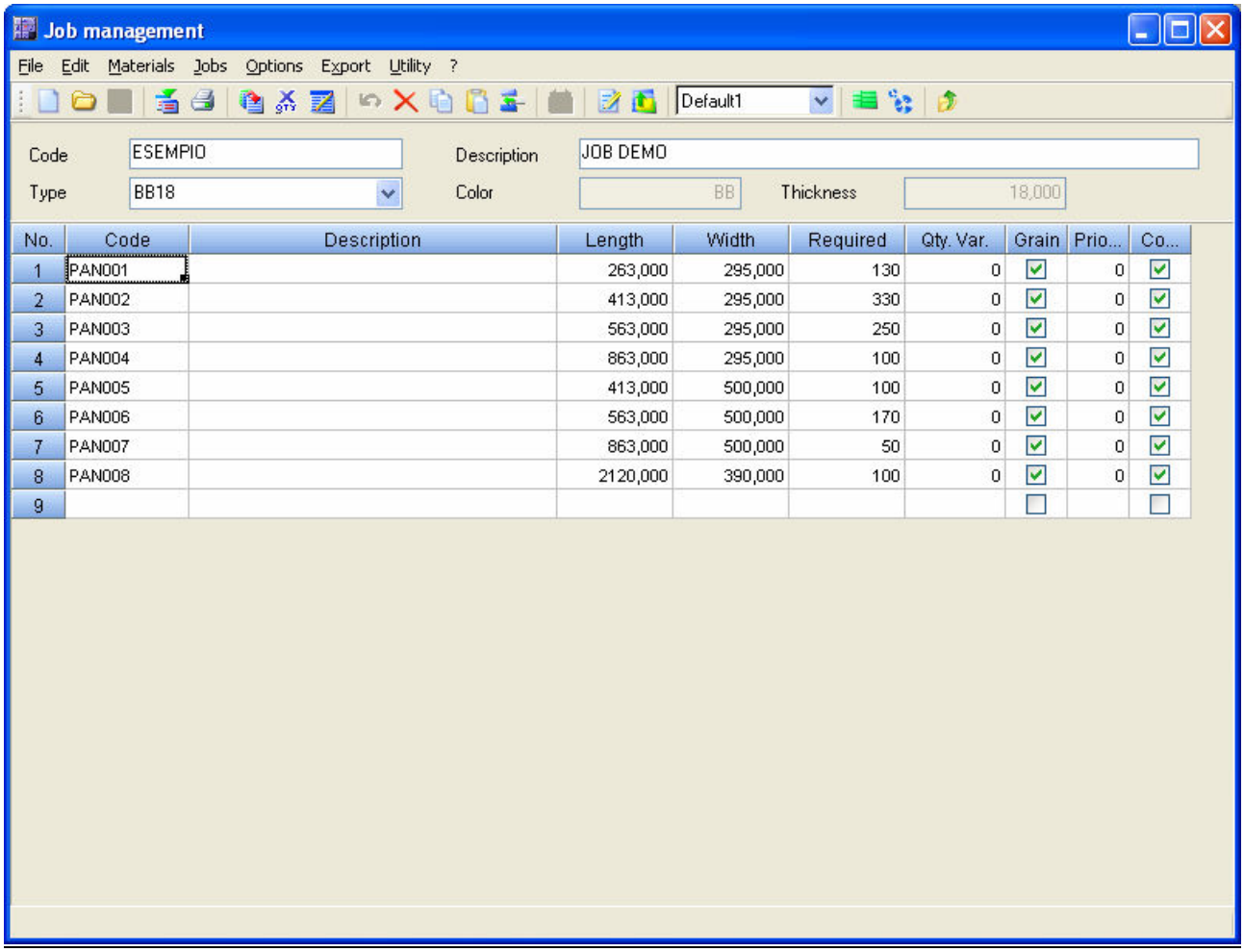
The job programming page is accessible from the menu using the items *New* and *Open* from the *Jobs* menu or using the shortcut keys F3 or Shift+F3.
There are two methods of access:

1. Selecting the function *New* an empty programming page is opened and data for a new job can therefore be programmed.
2. Selecting the function *Open* access is gained to the window *Open file* from where an existing list can be selected.

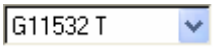


At this point the operator must select the name of the job to be opened using the left mouse button and press the button *Open* or *Undo* if the page is not to be opened.
Following the command *Open*, the programming page opens with the data of the selected job (see next page for the page layout).

N.B. Job management deals with the optimization of the cutting plans starting from the homogeneous panel lists, i.e. all with the same type of material (same color and same thickness); to optimize the lists containing panels of non-homogeneous materials (different thickness or color), use the *Multi-job Programming* (Optional).


Job management
File Edit Materials Jobs Options Export Utility ?
Default1
Code ESEMPIO
Description JOB DEMO
Type BB18
Color BB
Thickness 18,000
No. Code Description Length Width Required Qty. Var. Grain Prio... Co...
1 PAN001 263,000 295,000 130 0 0
2 PAN002 413,000 295,000 330 0 0
3 PAN003 563,000 295,000 250 0 0
4 PAN004 863,000 295,000 100 0 0
5 PAN005 413,000 500,000 100 0 0
6 PAN006 563,000 500,000 170 0 0
7 PAN007 863,000 500,000 50 0 0
8 PAN008 2120,000 390,000 100 0 0
9

Available functions in the tool bar

Icon	Shortcut	Description of function
	F3	Open a new job
	Shift + F3	Open an existing job
	Ctrl + P	Print the data related to the displayed materials
		Save the data set on the VDU; the existing data are overwritten
	Ctrl + S	Paste the panel data coming from an existing job
		Multiply the required quantities by the whole number inserted
		Open the parts archive page
		Open the parts archive page
	Ctrl + X	Delete the selected lines of the table (in blue)
	Ctrl + C	Paste the previously copied lines at the end of the table (append)
	Ctrl + V	Insert a line above the selected line
		Edit the optimization parameters of the active job
		Set the table columns with fixed width. Activation of the button depends on the general configuration
	Ctrl + F7	Optimize the cutting plans
	Ctrl + F6	Associate the materials to be used for the active job
		Select the machine profile to be associated with the job for time calculation
	Shift + F7	Open the results analyze page (patterns)
	F7	Optimize the cutting plans
	Ctrl + F4	Exit from the programming page

Additional functions

Refer to the section *"Using the keyboard"* at the beginning of this manual.

By double clicking in the first top left cell of the table, the table columns are resized so that all the columns are visible on the display page.

The display page is divided into two sections: the first, in the top part of the window, is the page heading and contains the controls for the general data related to the job; the second, in the remaining part of the window, contains the programming table of data related to the parts to be produced.

The function of "Paste data from other jobs" onto a job with external fields coming from a management is dependent on certain rules, which are

1) The job from which the parts are taken must have the same number of external fields as that to which they will be added.
2) No additions can be made if parts have already been added manually in the job.

Moreover, the functions of copy and paste and line deletion cannot be used on a job coming from Management with external fields and are therefore disabled.

Heading fields

Code **no limit**
Mnemonic code to be assigned to the job; this corresponds to the name of the file in which the data will be saved. To create replicas of the job on disk, just edit this field and save the data.
N.B. The inserted job code cannot have the MLC extension, which is reserved for the multi-job programs.

Description **max 50 characters**
Brief description of the job. The field may be left empty.

Type
Material type. By selecting this field, also information related to the color and thickness is displayed.

Color
Color of the selected type. This field cannot be changed.

Thickness
Thickness of the selected type. This field cannot be changed.

Description of fields of the programming table

Code **max 20 characters**
Mnemonic code assigned to the part.

Description **max 50characters**
Brief description assigned to the part. The field may be left empty.

Length **min = 1** **max = 6500**
Part length.

Width **min = 1** **max = 6500**
Part width
N.B.: the limits for length and width may be set in general configuration through the respective parameters "*Length/Width for piece*"

Required **min = 0** **max = 32767**
Number of pieces required for the part.

Qty.Var. **min = 0** **max = 32767**
"Quantity Variation". Maximum surplus quantity to be produced for the part. It replaces the value set in configuration

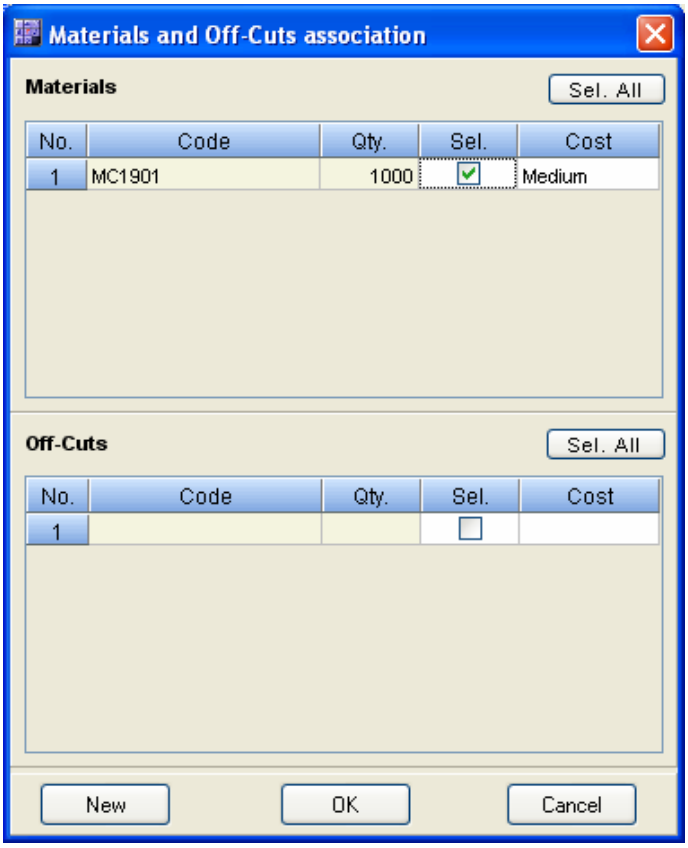
Grain **0/1**
This contains the information on the grain of the part and indicates whether the part may be rotated in the cutting plan (cell not selected) or not (cell selected).

Priority **min = 0**
Priority of optimization. The workpieces with lower priority are cut before the others

Composition
Contains information regarding the composition of the workpiece, indicating whether the workpiece may be composed at unloading ☑ or not ☐. If the workpiece cannot be composed, the workpiece will be unloaded one by one or according to the compositions set by external programs. E.g. EasyCut.

Materials Association

The boards association allows the program to edit the board sizes of the materials to be used for the optimized cutting plans of the active job. This operation may be repeated several times, also to choose the board sizes that give the best result according to requirements.
Upon selecting the function from the menu or from the tool bar, the page “Materials and Off-Cuts association” is opened and has the following layout:



Description of buttons:

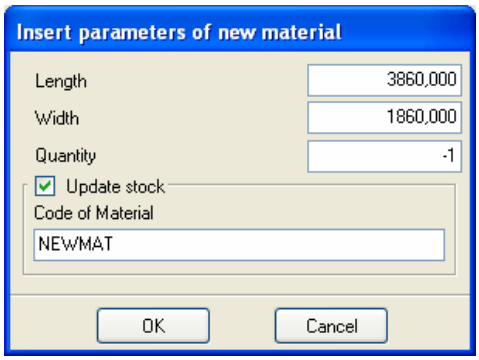
Sel. All Mat.: Select all materials.

Sel. All: Select all off-cuts.

Undo: Close the association window without associating any material

OK: Close the association window storing all the materials and all the off-cuts in the selected job

New: Display a window for defining a new material; the window has the following layout:



The page contains two tables: the first, in the upper part of the window, displays all the materials in stock having the same selected type; the second, in the lower part of the window, displays all the off-cuts with the same characteristics.
The materials already associated with the job have the corresponding cell *Sel*. enabled.
The selected materials highlighted in gray rather than black have been removed from the materials archive.
If both tables are empty, this means that no board size for the material of the job has been inserted in the materials/off-cuts archive, in which case:

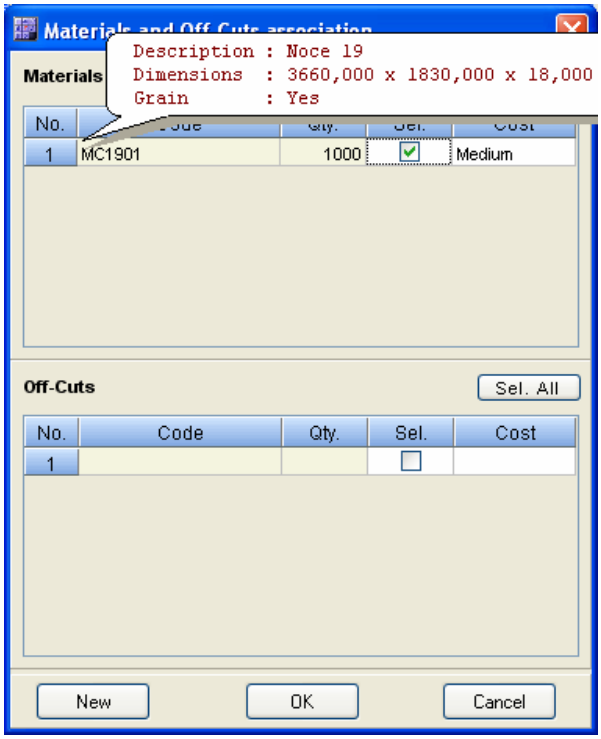
- Check that the color and the thickness inserted in the job are correct;
- Check that the type inserted in the job is correct;

If necessary insert a board size for the material of the job in the materials archive.
N.B. Remember that until a board size of material is associated with the job, it will be impossible to optimize the cutting plans.

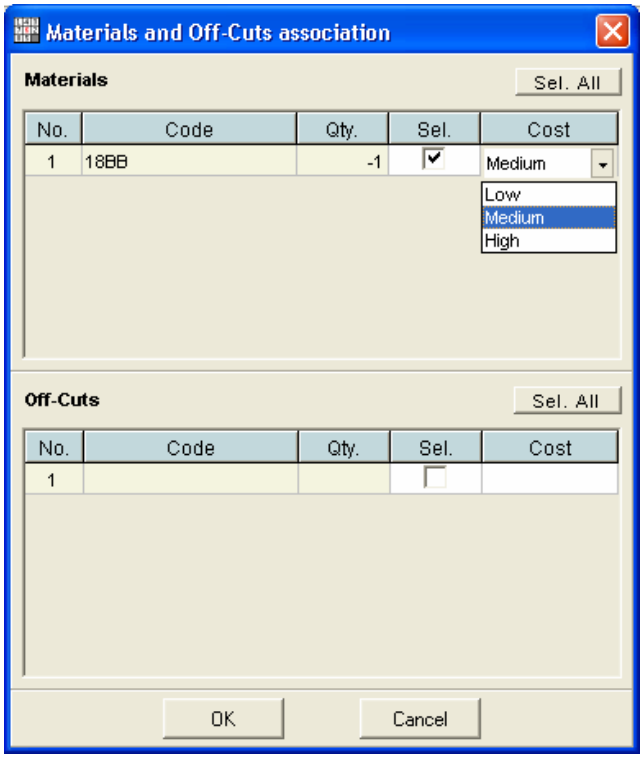
Annulla modifiche

Salva modifiche

Additional information:
The code and quantity in stock are given as information (in yellow) for each material or off-cut; to display further information on a material, right click (i.e. using the right mouse button) on the corresponding line and the additional information will appear in a callout as described in the following figure:

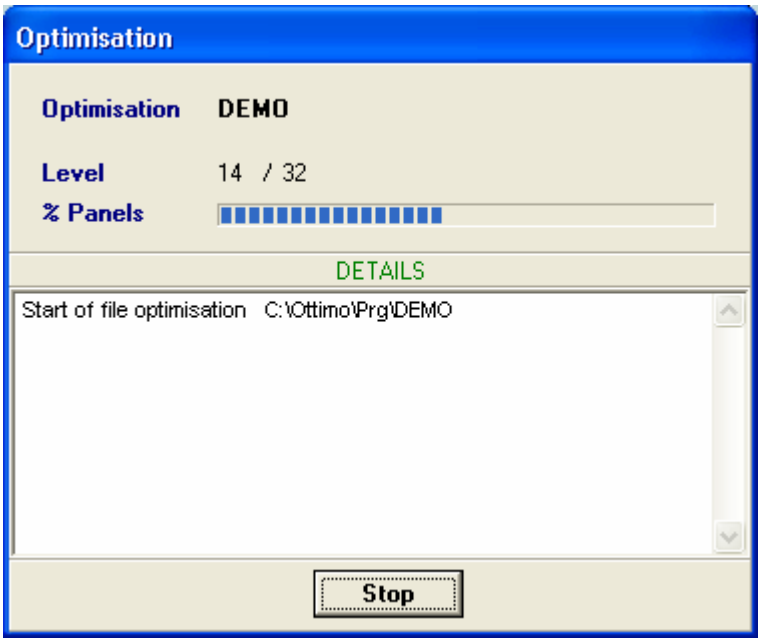


How to associate the materials or the off-cuts to be used:
Select the cell *Sel.* (=>☑) of just the boards to be used for the job. The buttons *Sel. All / Sel. All* select all the materials and all the off-cuts respectively.
A priority of use may be associated with the board sizes of the materials through the corresponding cell *Prior*, as shown in the figure below: the assigned priorities may be Low, Medium, High; the higher the priority assigned to a material, the greater its use in the cutting plans.



Processing.

The processing function is the most important part of the program; it has the purpose of optimizing the cutting plans for the selected job on the basis of the list of inserted panels, the associated board sizes of the materials and the set configuration parameters.
When accessing the function (from the menu, tool bar or key F7), the window “Optimization” is automatically opened and has the following layout:



Operation
This window displays information regarding the status of the processing and has a single operating function – that of stopping the processing, done by pressing the STOP button.

Description of fields

Processing: this is followed by the code of the job that is being processed
Level: this indicates the current level of processing.
% Panels: during processing the indicator displays the percentage of process feed.
DETAILS: the information window at the bottom indicates the stage of optimization and any errors detected during the same.

N.B. The processing time varies from job to job according to the set work load, i.e. the number of parts in the list, the number of associated boards of material and the set parameters.

If the processing is successful, the program automatically opens the page “Analyze” (*patterns*) at the end.

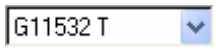
Analyze

The window *Analyze (patterns*) is automatically opened at the end of successful processing or, if enabled, from the tool bar menu or using the keys Shift + F7. It consists of four cards, the headings of which are given under the tool bar; the displayed default pattern is the **Patterns** card**.**
The window *Patterns*, the layout of which is shown below, is divided into two parts: the first, under the card headings, gives the general data related to the cutting plans; the second, in the lower part, gives the table with the drawing of all the cutting plans. To display all the cutting patterns, use the vertical scroll bar, if present.

Operation

The patterns page allows the cutting plans to be analyzed and printed as a whole and in detail, pattern by pattern; it also allows a pattern to be eliminated or a new one to be edited, as well as to operate manually on a pattern by inserting or removing parts and head-cuts.
Lastly, it allows the reports on the materials used, the parts and the produced strips to be consulted and printed.
With double left click (clicking the left mouse button twice in quick succession) on one of the cutting patterns, the page “Analyze Pattern” is displayed, which is described later on.

Available functions in the tool bar

Icon	Shortcut	Description of function
	Ctrl + S	Update and save the data related to the cutting patterns
	Ctrl + P	Patterns: displays the preview of the patterns page
	Ctrl + P	Statistics: print the page of the active statistics
		Statistics: save the active statistics page in PDF format
	Ctrl + F7	Open the optimization parameters page of the active job
		Alternate the display of the side-by-side bar patterns with the normal display. The function is only available with CrossFlex key
		Display pallet composition manual editor window
		Enable/disable the deletion of the patterns
		Insert a new pattern
		Search for a part by index or by code in the cutting patterns
		Puts the patterns in order by material format
		Display the indicated number of patterns on the screen.
		Select the machine profile to be associated with the job for time calculation
		Update the materials stock also with the generated off-cuts
		Creates a list with all the pieces, in which the obtained quantity does not reach the requested quantity
	F8	Send the programs for the machine
		Reprocess the cutting plans from the selected pattern
	F7	Re-process the cutting plans
	Ctrl + F4	Exit from the analyze patterns page
		Statistics: resize to window height
		Statistics: resize to window width
		Statistics: same size as sheet
		Statistics: percentage zoom
		Statistics: go to first page
		Statistics: go to previous page
		Statistics: go to next page
		Statistics: go to last page

Description of fields

Job: Job code.

Type Material type. By selecting this field, also information related to the color and thickness is displayed.

Color Color of the selected type. This field cannot be changed.

Thickness Thickness of the selected type. This field cannot be changed.

No. patterns: Number of obtained patterns.

Gross: Total square meters of material used.

Net: Total square meters of parts produced.

% Waste: Percentage of waste. Ratio between total surface area of the used materials and total (finished measurement) parts.

% Waste (2): Percentage of waste determined by also calculating the surplus material in the obtained net value (parts cut measurement).

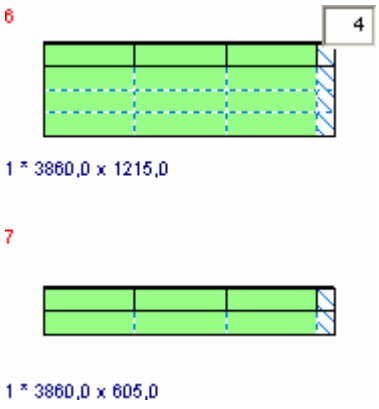
Total time: Estimated total machine time for executing all the patterns.

Pattern drawing: In the table of the patterns, the diminished drawing is given of each cutting plan with the number of the cutting pattern at the top and the number of sheets and the dimensions of the material used at the bottom. If the function *Recycle off-cuts* (parameter 7A of the general configuration) is activated, any off-cuts determined by the program will be yellow.

Peculiarities:

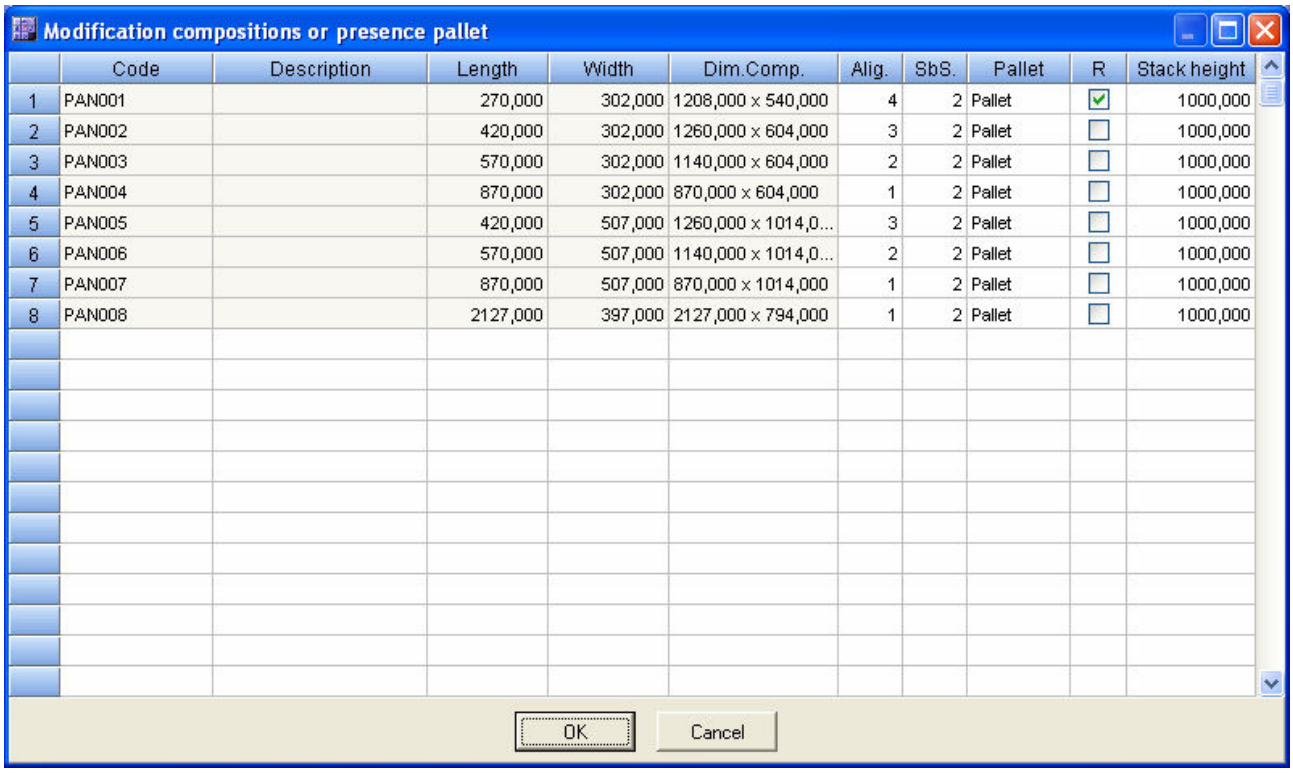
Certain functions of this window have a particular use and are:

Side-by-side bars: the function is only available in CROSSFLEX mode and allows switching between side-by-side display and normal display of the bars. An example of bar display is given below



This example refers to a pattern that must be repeated for 6 sheets. The default side-by-side placing of the bars is established according to the value of the parameter "*Maximum width for side-by-side bars*" see general configuration. E.g.: Maximum width 1300, bar height 300 means that the bar can have 4 placings side-by-side at the most.
The edit field may be varied at will, obviously within the allowed limits. If the inserted side-by-side value is too high the field is highlighted in red 5

Composition manual editor: the function allows the following window for the manual editor of unloading data to be displayed



Code **max 20 characters**
Mnemonic code assigned to the part.

Description **max 50 characters**
Brief description assigned to the part. The field may be left empty.

Length
Length of the part

Width
Width of the part

Comp. size
Composition size

All.
Number of possible alignments with the workpiece

Aff.
Number of possible alignments with the workpiece

Pallet
Identifies pallet management or not

R
Identifies whether the pallet may be rotated or not during unloading.

Stack height
Identifies the maximum height of the stack on the roller unit
The cells with gray background cannot be edited. The lines with light blue background indicate that the workpiece must be unloaded in the manual mode and they do not have cells that can be edited.

Delete patterns: Upon activating this function the cursor passes from the normal arrow to an oblique cross; as long as the cursor has this shape, the displayed patterns may be eliminated one by one through double click on them. To return to the normal working status (cursor with the shape of an arrow), just re-select the button "delete patterns".
Confirmation for deletion is requested and upon confirming, the pattern is removed from the cutting plan.
Board order*:* if the option is activated and the optimization includes various boards of material at the same time, the patterns are put in order by type of material, i.e. the patterns with the same material are grouped together.

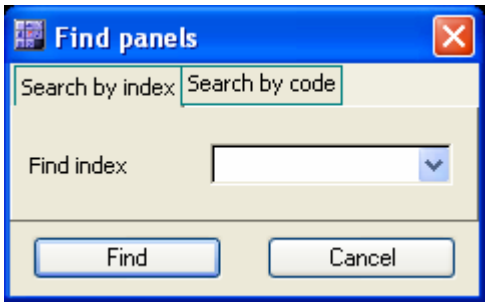
CAUTION:
1) If the key to save the program is not pressed after manual editing, the changes are lost upon exiting from the page!
2) If the original program is re-processed, any changes made are lost!

New pattern : Upon activating this function, a window appears with the available materials for the job; after having selected the material to be used, the page *Analyze Pattern,* described later on, is opened.

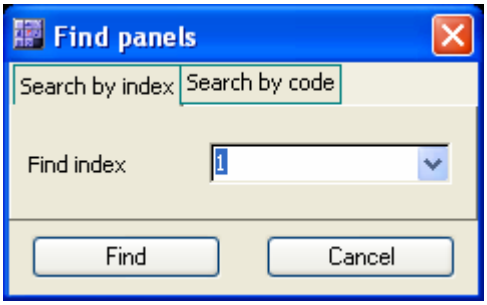
Update the materials stock also with the generated off-cuts : Upon activating this function, the quantities of material used in the optimization are unloaded from the stock and the determined off-cuts (yellow in the patterns) are automatically loaded in stock.

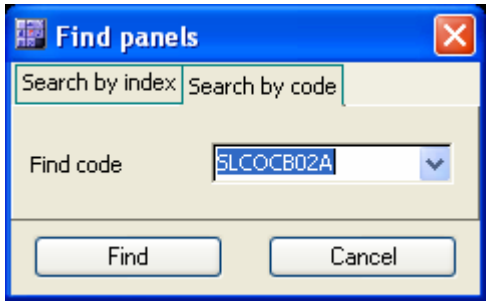
CAUTION:
1) If this function is repeated, a warning is displayed with request for confirmation in order to proceed with a further updating of the materials stock.
2) If the cutting plans are re-processed after having used this function, a message is displayed with the request for confirmation to proceed with the re-processing.

Find panel : Upon activating this function, the following window is displayed:



The window allows two cards to be selected: the first is for the search of a panel inside the cutting patterns through its index, the second through its code. After having selected, as shown in the figure below, the index or the code of the panel to be found, upon pressing the button <Find > the first time the part occurs it is displayed in red, upon pressing <Next> all the others will be displayed.
Press <Undo > to exit from the page.
Two examples of search by index and by code are displayed in the two figures below.

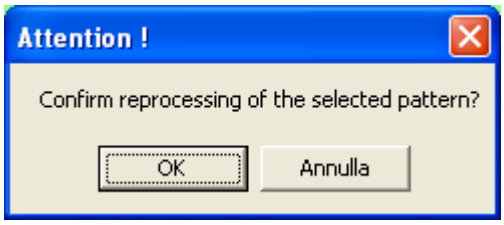




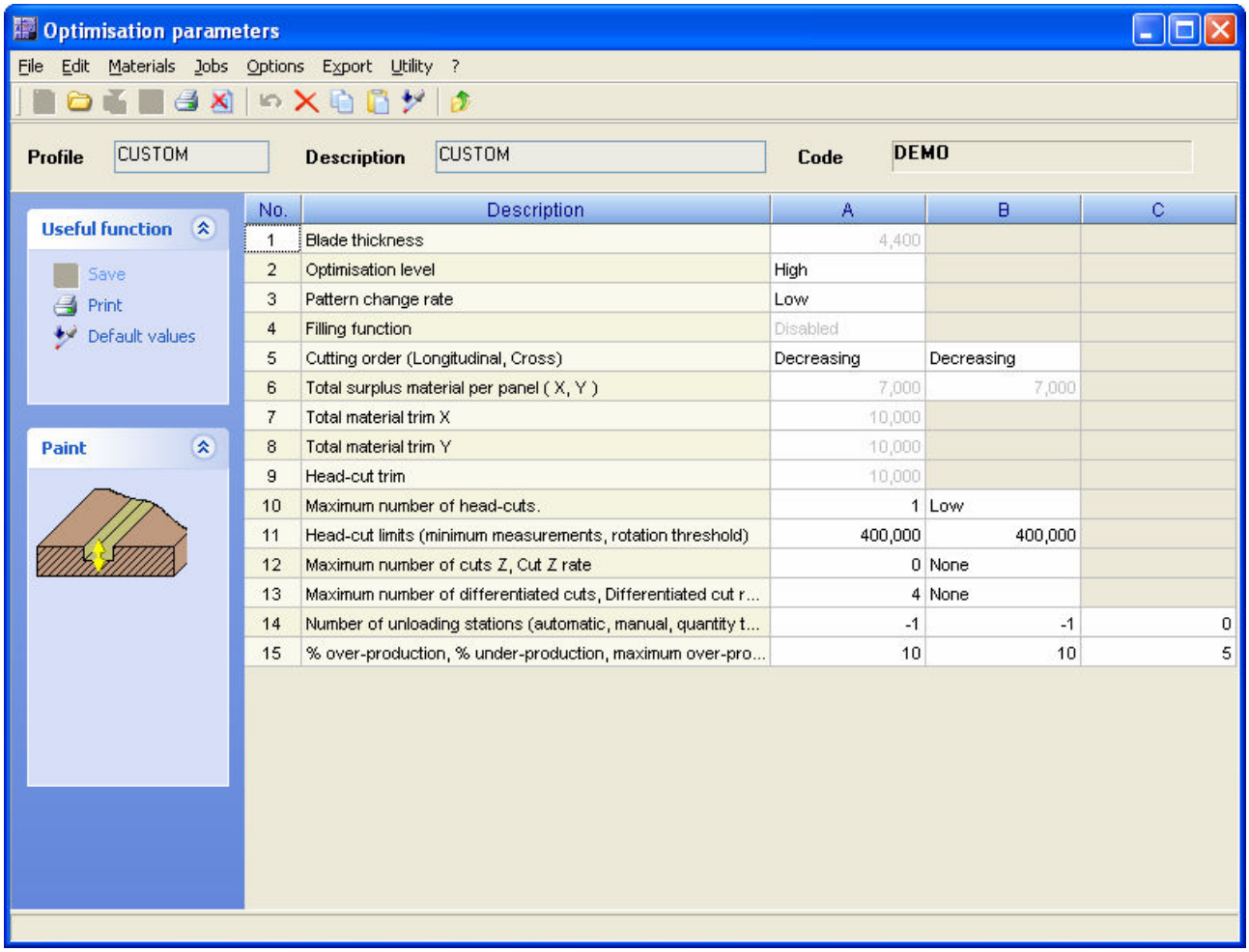
N.B. The Find Panel function is only enabled if the function *Compacting equal measurements* in the *General Configuration* (parameter 5A) is disabled.

General statistics, Panel statistics and Strip statistics : Each of these functions, which may be activated by selecting the corresponding card, is described in the following pages.

Reprocess the cutting plans from the selected pattern The function may be activated either with a click on the right mouse button or by pressing the relative button on the tool bar. The function can be used to optimize the job from any position in the cutting plan list leaving all the previous patterns unchanged; once activated:
a message of confirmation ***is displayed*** that allows the operation to be continued or stopped



upon confirming the reprocessing the optimization configuration page is displayed so that the user may customize the re-optimization,

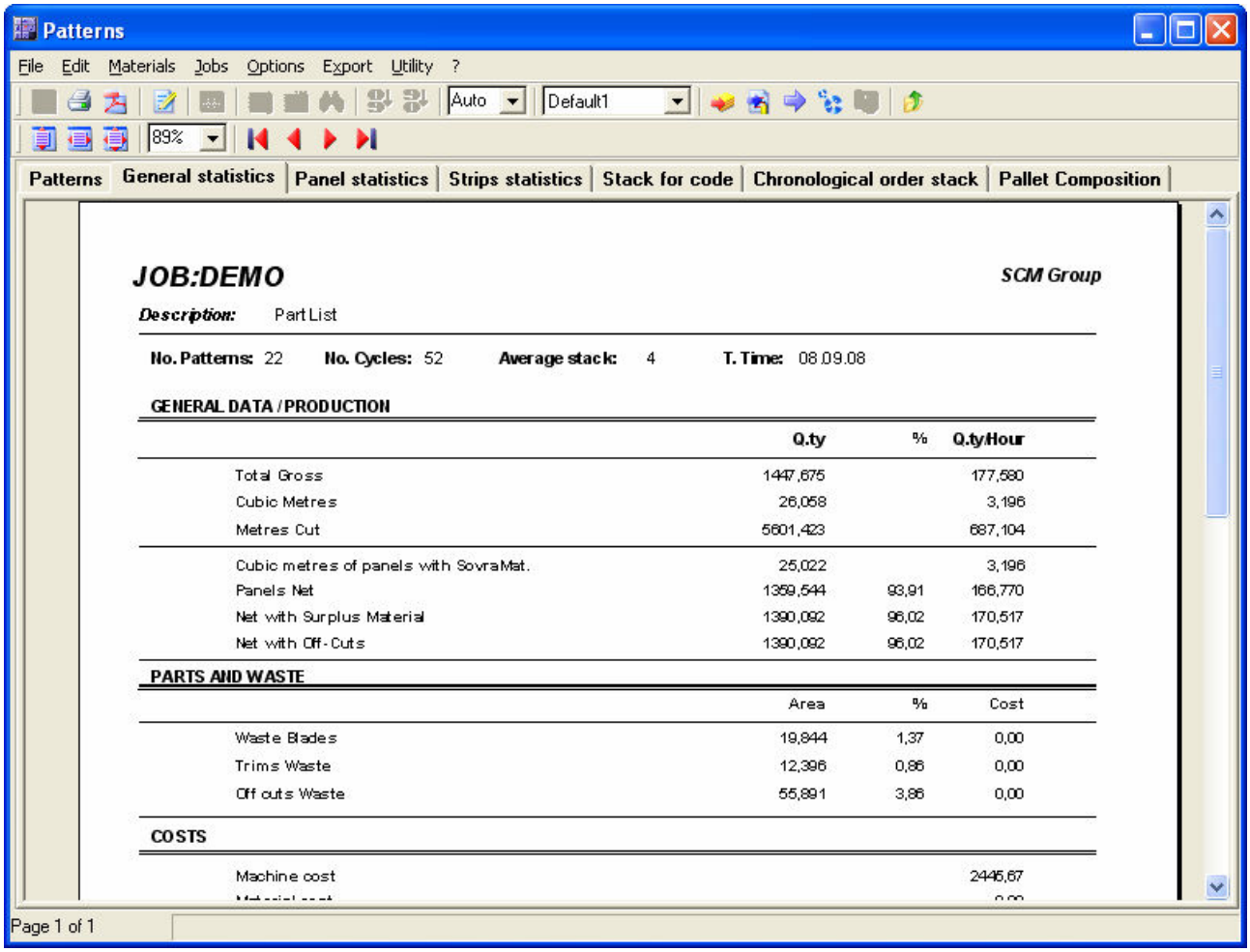


No.	Description	A	B	C
1	Blade thickness	4,400		
2	Optimisation level	High		
3	Pattern change rate	Low		
4	Filling function	Disabled		
5	Cutting order (Longitudinal, Cross)	Decreasing	Decreasing	
6	Total surplus material per panel (X, Y)	7,000	7,000	
7	Total material trim X	10,000		
8	Total material trim Y	10,000		
9	Head-cut trim	10,000		
10	Maximum number of head-cuts.	1	Low	
11	Head-cut limits (minimum measurements, rotation threshold)	400,000	400,000	
12	Maximum number of cuts Z, Cut Z rate	0	None	
13	Maximum number of differentiated cuts, Differentiated cut r...	4	None	
14	Number of unloading stations (automatic, manual, quantity t...	-1	-1	0
15	% over-production, % under-production, maximum over-pro...	10	10	5

N.B.: all the values that appear in gray are fixed values for the job and cannot be edited, while all the other values may be edited at each re-optimization. The changes made to the configuration have a temporary value that is only useful for the reprocessing.

Analyze – General statistics

The page *General statistics* is accessed by selecting the corresponding card from the window *Analyze (patterns).* A display page appears with the calculated general data and the list of materials used.
The page has the following layout:



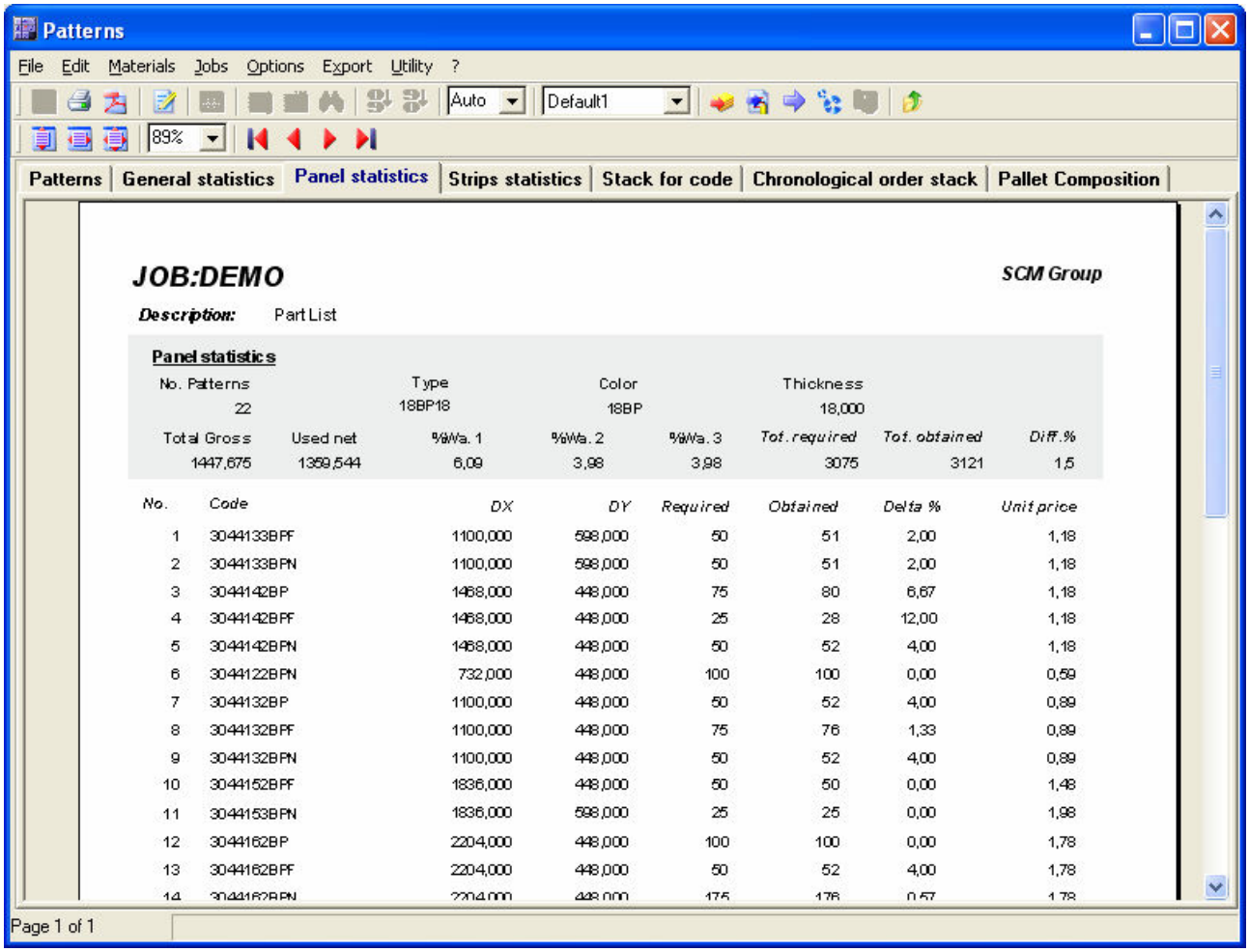
Available functions in the tool bar
Compared to the analyze page, the display functions of a classic preview have been introduced:

Description of fields

Job:	Job code.
Description:	Job description.
Type	Material type. By selecting this field, also information related to the color and thickness is displayed.
Color	Color of the selected type. This field cannot be changed.
Thickness	Thickness of the selected type. This field cannot be changed.
No. patterns:	Number of obtained patterns.
No. Cycles :	Total number of cycles that will be executed always considering full stack.
Average stack height:	Number sheets total / Number of cycles total
Operator time:	Total time taken by the operator to handle the pieces.
Tot. Time:	Total calculated time for executing the whole job.
Total gross:	Total square meters of used material.
Cubic metres:	Total cubic meters of used material.
Metres cut:	Meters cut by all the blades.
Cubic metres of panels with SovraMat.:	Total meters cubic of panels with surplus material
Panels Net:	Total square meters of used material plus the blades
Net with Surplus material:	Total square meters of used material plus the blades, plus the surplus material.
Net with Off-Cuts:	Total square meters of used material plus the blades, plus the surplus material, plus the off –cuts.
Waste blades:	Square meters of material pulverized by the blade.
Trims waste:	Square meters of trim calculated on the basis of the set parameters.
Off-cuts waste:	Square meters of remainder.
Machine cost:	The machine cost is obtained by multiplying the hourly cost of the machine by the total job time.
Material cost:	This is obtained by multiplying the square meters of each material by its set unit cost.
Total cost:	This is obtained by adding together the two preceding costs.
Cost for Sq. m:	This is obtained by dividing the total cost by the total gross.
Grid:	The table displays the list of job associated materials with the number of sheets used for each .

Analyze – Panel statistics

The page *Panel statistics* is accessed by selecting the corresponding card from the window *Analyze (patterns).* A display page appears with the calculated general data and with the table giving the production data of the panels and any generated off-cuts.
The page has the following layout:



Available functions in the tool bar
See previous page

Description of fields

Job: Job code.

Description: Job description.

No. patterns: Number of obtained patterns.

Type Material type. By selecting this field, also information related to the color and thickness is displayed.

Color Color of the selected type. This field cannot be changed.

Thickness Thickness of the selected type. This field cannot be changed.

Total gross: Total square meters of used material.

Useful net: Total square meters of used material less waste.

% Waste: Percentage of waste. Ratio between total surface area of the used materials and total (finished measurement) parts.

% Waste (2): Percentage of waste, by also calculating the surplus material in the obtained net (parts cut measurement)

% Waste (3): Percentage waste. Ratio between total surface area of the used materials and the net quantity with off-cut.

Total Required: Total number of required pieces

TotalObtained: Total number of pieces obtained by optimization

Diff. (%): Percentage difference between required and obtained.

Table: The table displays for each panel on the list and for any off-cuts generated by the job, the code, the length, the width, the required quantity of pieces and the following production data:

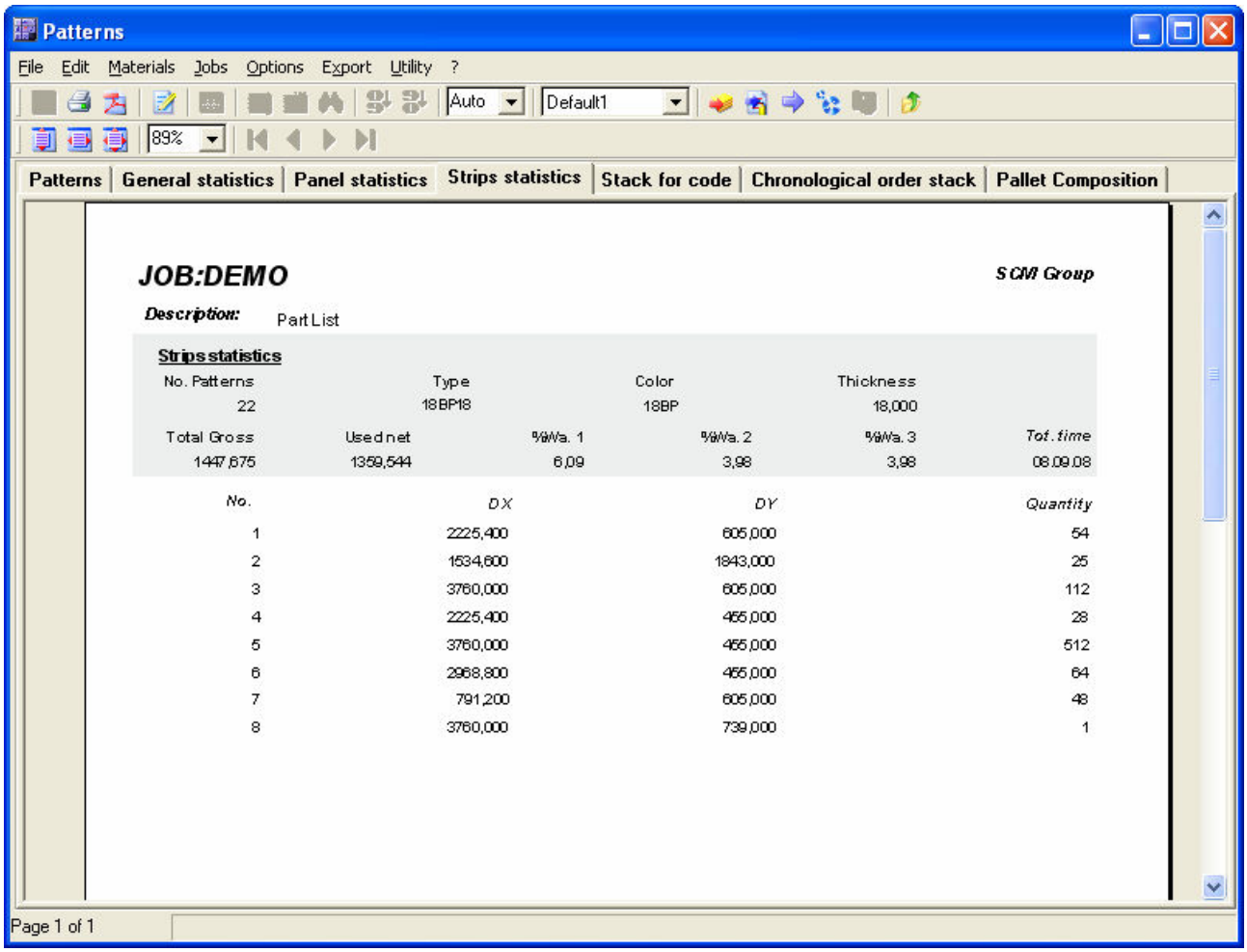
Obtained: The number of pieces obtained by the optimization.

% Diff: The percentage difference between the number of required pieces and those obtained.

Unit price: This is obtained by multiplying the cost per square meter by the square meters of each part.

Analyze – Strip statistics

The page *Strip statistics* is accessed by selecting the corresponding card in the window *Analyze (patterns)*. A display page appears with the calculated general data and with the table giving the production data of the cut strips (result of the longitudinal cuts).
The page has the following layout:



Available functions in the tool bar
See previous page

Operation
See page “ANALYZE”

Description of fields

Job: Job code.

Description: Job description.

Type Material type. By selecting this field, also information related to the color and thickness is displayed.

Color Color of the selected type. This field cannot be changed.

Thickness Thickness of the selected type. This field cannot be changed.

No. patterns: Number of obtained patterns.

Total gross: Total square meters of used material.

Net: Total square meters of used material less the waste.

% Waste: Percentage of waste. Ratio between total surface area of the used materials and total (finished measurement) parts.

% Waste (2): Percentage of waste by also calculating the surplus material in the obtained net (parts cut measurement)

% Waste (3): Percentage waste. Ratio between total surface area of the used materials and the net quantity with off-cut.

Total time: Estimated total machine time for executing all the patterns.

Table:
The table displays the dimensions and the quantity of obtained strips for each strip:

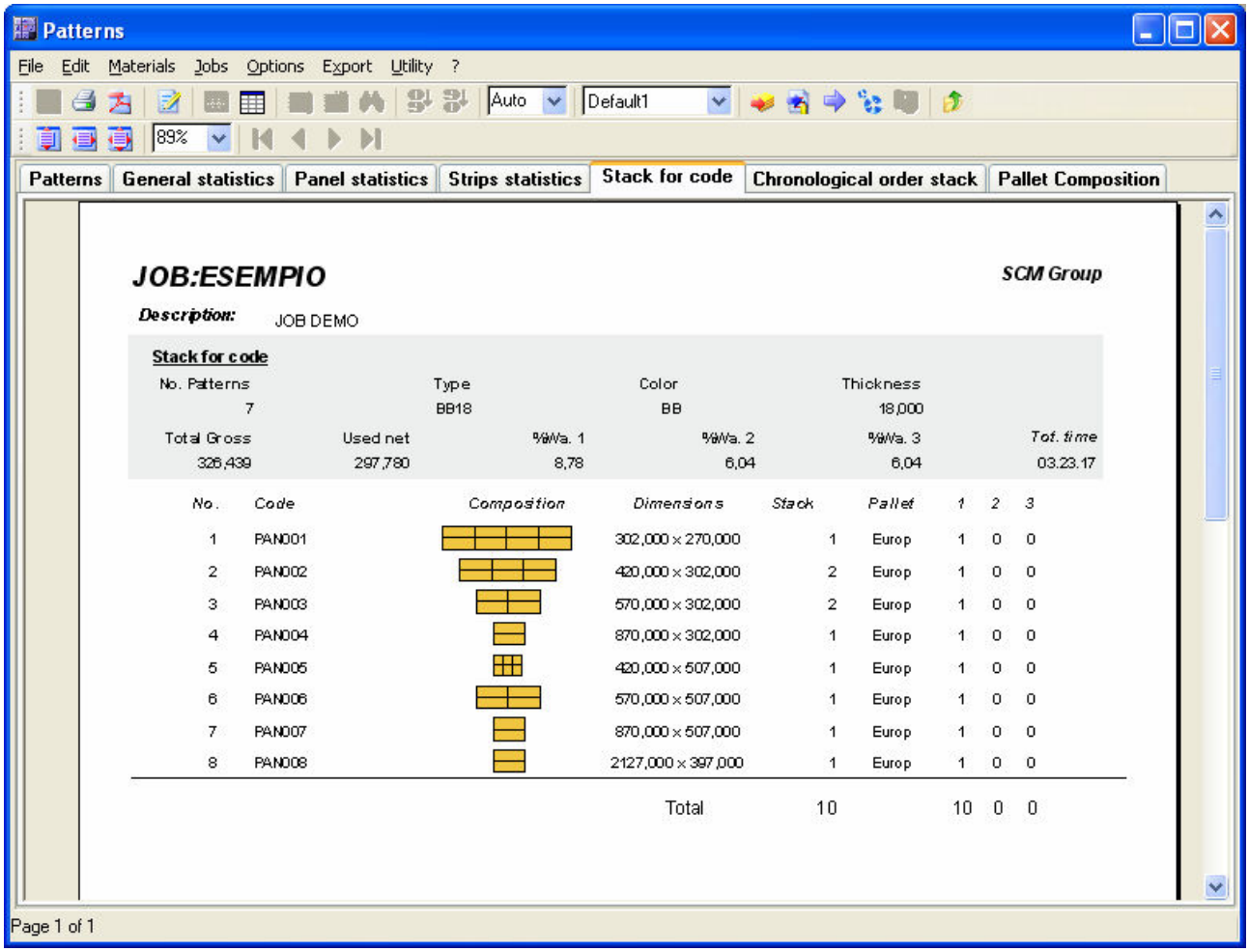
Length: Strip length.

Width: Strip width.

Quantity: Total number of obtained strips in the cutting plans.

Analyze – Stack Statistics by Code

The page *Stack Statistics by Code* is accessed by selecting the corresponding card in the *Analyze* window. A display page appears with the calculated general data and with the table giving the production data of the panels arranged in the various pallets.


Patterns
File Edit Materials Jobs Options Export Utility ?
Auto
Default1
89%
Patterns
General statistics
Panel statistics
Strips statistics
Stack for code
Chronological order stack
Pallet Composition
JOB:ESEMPIO
SCM Group
Description: JOB DEMO
Stack for code
No. Patterns 7
Type BB18
Color BB
Thickness 18,000
Total Gross 326,439
Used net 297,780
%Wa. 1 8,78
%Wa. 2 6,04
%Wa. 3 6,04
Tot. time 03.23.17
No. Code Composition Dimensions Stack Pallet 1 2 3
1 PAN001 302,000 x 270,000 1 Europ 1 0 0
2 PAN002 420,000 x 302,000 2 Europ 1 0 0
3 PAN003 570,000 x 302,000 2 Europ 1 0 0
4 PAN004 870,000 x 302,000 1 Europ 1 0 0
5 PAN005 420,000 x 507,000 1 Europ 1 0 0
6 PAN006 570,000 x 507,000 1 Europ 1 0 0
7 PAN007 870,000 x 507,000 1 Europ 1 0 0
8 PAN008 2127,000 x 397,000 1 Europ 1 0 0
Total 10 10 0 0
Page 1 of 1

Available functions in the tool bar
See previous page

Operation
See page “ANALYZE”

Description of fields

Job: Job code.

Description: Job description.

Type Material type. By selecting this field, also information related to the color and thickness is displayed.

Color Color of the selected type. This field cannot be changed.

Thickness Thickness of the selected type. This field cannot be changed.

No. patterns: Number of obtained patterns.

Total gross: Total square meters of used material.

Net: Total square meters of used material less the waste.

% Waste: Percentage of waste. Ratio between total surface area of the used materials and total (finished measurement) parts.

% Waste (2): Percentage of waste by also calculating the surplus material in the obtained net (parts cut measurement)

% Waste (3): Percentage waste. Ratio between total surface area of the used materials and the net quantity with off-cut.

Total time: Estimated total machine time for executing all the patterns.

Table:
The table displays the code, workpiece size and the following information regarding the pallet for every panel in the list:

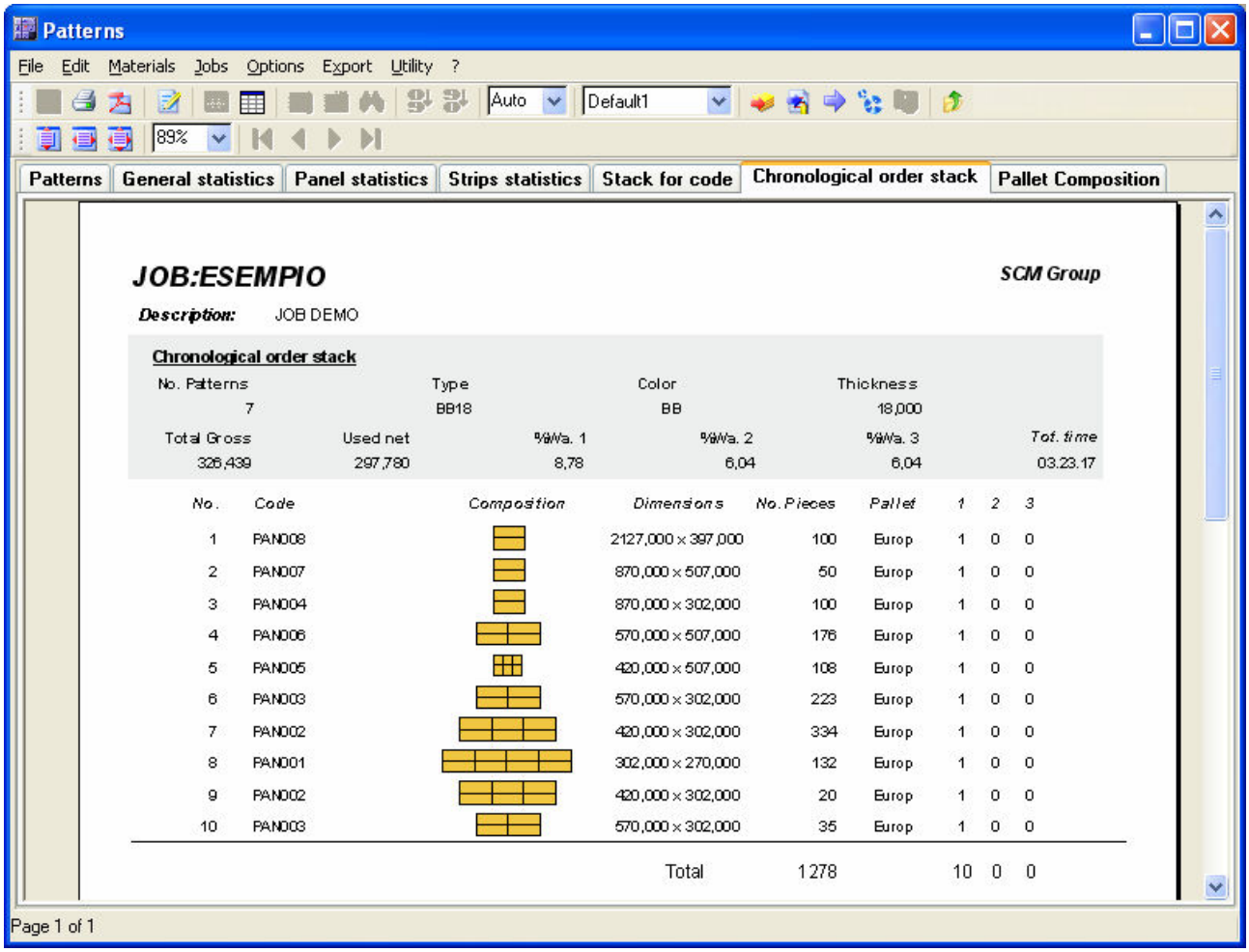
Composition: through an image, it shows how the pieces will be positioned on the pallet

Stack No.: number of stacks generated with that pallet

Pallet: type of pallet used; see unloading configuration

Analyze – Stack Statistics by chronological order

The *Stack Statistics by chronological order* page is accessed by selecting the corresponding card in the *Analyze* window. A display page appears with the calculated general data and with the table giving the production data of the panels arranged in the various pallets.


Patterns
File Edit Materials Jobs Options Export Utility ?
Auto
Default1
89%
Patterns
General statistics
Panel statistics
Strips statistics
Stack for code
Chronological order stack
Pallet Composition
JOB:ESEMPIO
SCM Group
Description: JOB DEMO
Chronological order stack
No. Patterns 7
Type BB18
Color BB
Thickness 18,000
Total Gross 326,439
Used net 297,780
%Wa. 1 8,78
%Wa. 2 6,04
%Wa. 3 6,04
Tot. time 03.23.17
No. Code Composition Dimensions No. Pieces Pallet 1 2 3
1 PAN008 2127,000 x 397,000 100 Europ 1 0 0
2 PAN007 870,000 x 507,000 50 Europ 1 0 0
3 PAN004 870,000 x 302,000 100 Europ 1 0 0
4 PAN006 570,000 x 507,000 176 Europ 1 0 0
5 PAN005 420,000 x 507,000 108 Europ 1 0 0
6 PAN003 570,000 x 302,000 223 Europ 1 0 0
7 PAN002 420,000 x 302,000 334 Europ 1 0 0
8 PAN001 302,000 x 270,000 132 Europ 1 0 0
9 PAN002 420,000 x 302,000 20 Europ 1 0 0
10 PAN003 570,000 x 302,000 35 Europ 1 0 0
Total 1278 10 0 0
Page 1 of 1

Available functions in the tool bar
See previous page

Operation
See page “ANALYZE”

Description of fields

Job: Job code.

Description: Job description.

Type Material type. By selecting this field, also information related to the color and thickness is displayed.

Color Color of the selected type. This field cannot be changed.

Thickness Thickness of the selected type. This field cannot be changed.

No. patterns: Number of obtained patterns.

Total gross: Total square meters of used material.

Net: Total square meters of used material less the waste.

% Waste: Percentage of waste. Ratio between total surface area of the used materials and total (finished measurement) parts.

% Waste (2): Percentage of waste by also calculating the surplus material in the obtained net (parts cut measurement)

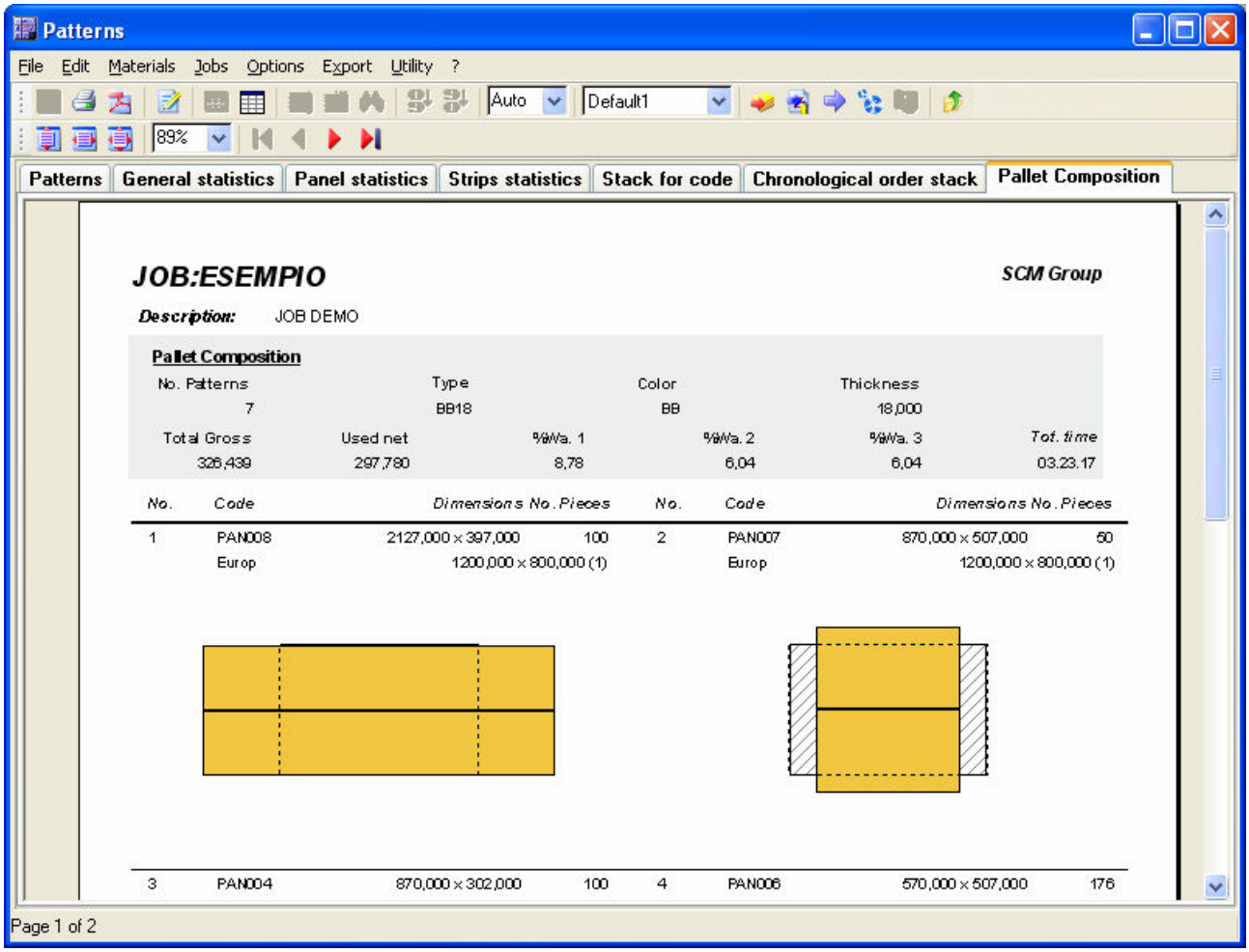
% Waste (3): Percentage waste. Ratio between total surface area of the used materials and the net quantity with off-cut.

Total time: Estimated total machine time for executing all the patterns.

Table:
The table displays the code, pallet composition, workpiece size, number of stacks, used pallet and quantity of used pallets for every panel in the list

Analyze – Pallet Composition Statistics

The *Pallet Composition Statistics* page is accessed by selecting the corresponding card in the *Analyze* window. A display page appears with the calculated general data and with the table giving the production data of the panels arranged in the various pallets.



Available functions in the tool bar
See previous page

Operation
See page “ANALYZE”

Description of fields

Job: Job code.

Description: Job description.

Type Material type. By selecting this field, also information related to the color and thickness is displayed.

Color Color of the selected type. This field cannot be changed.

Thickness Thickness of the selected type. This field cannot be changed.

No. patterns: Number of obtained patterns.

Total gross: Total square meters of used material.

Net: Total square meters of used material less the waste.

% Waste: Percentage of waste. Ratio between total surface area of the used materials and total (finished measurement) parts.

% Waste (2): Percentage of waste by also calculating the surplus material in the obtained net (parts cut measurement)

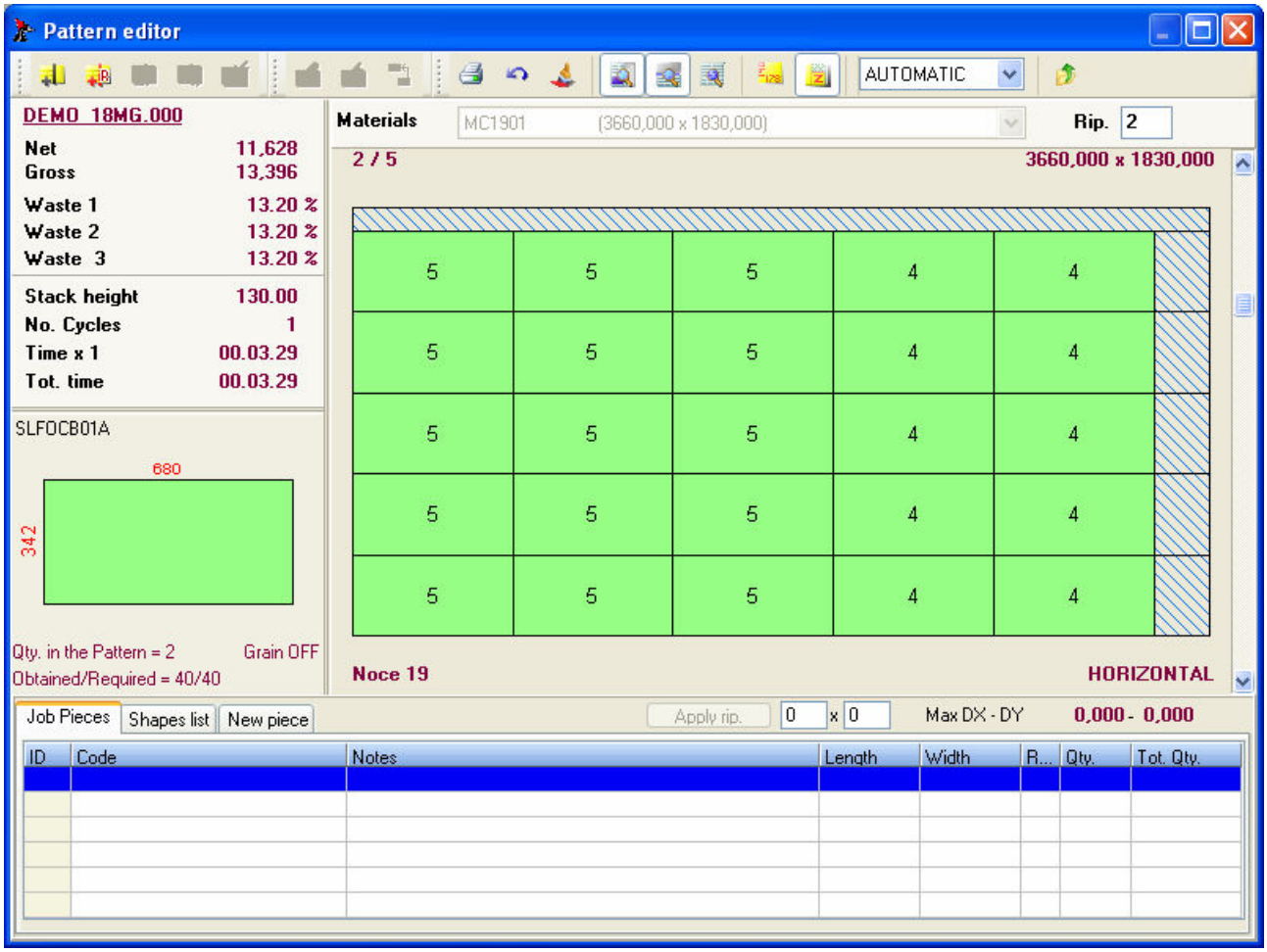
% Waste (3): Percentage waste. Ratio between total surface area of the used materials and the net quantity with off-cut.

Total time: Estimated total machine time for executing all the patterns.

Table:
The table appears divided into line boxes; each box is in turn divided into three rows as follows:
1. Information related to the used panel
2. Information related to the used pallet
3. Drawing of the pallet composition

Analyze – Pattern Editor

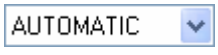
The *Pattern Editor* page is accessed from the window *Analyze (Patterns)* by selecting with a double click a cutting plan or using the function *New pattern.*
The editor programming page layout is as follows.



Four labels are displayed in the four corners of the window, as follows:

1 / 18	This represents the selected pattern index and the maximum number of patterns of the job respectively.
3660,000 x 1830,000	Size of the material used for the cutting plan
Noce 19	Description of the material used for the cutting plan
HORIZONTAL	This indicates the side of the head cut in the displayed pattern; the displayed labels may be: - HORIZONTAL, VERTICAL, see ***Primo taglio (Head cut)*** of optimization configuration - HEAD-CUT if a normal head-cut has been inserted - ROTATED HEAD-CUT if a rotated head-cut has been inserted

Functions available in the toolbar

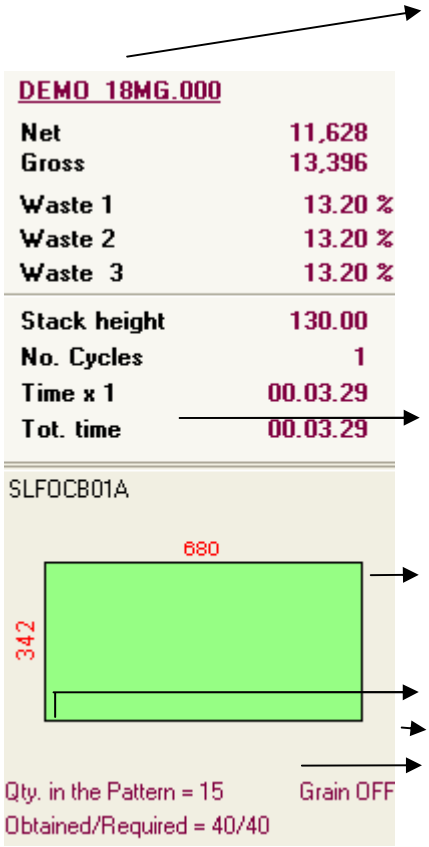
Icon	Shortcut	Description of function
		If this function is activated a head-cut is inserted at the distance described in the "**dimension**" parameter, of the displayed window
		If this function is activated a rotated head-cut is inserted at the distance described in the "**dimension**" parameter, of the displayed window
		If this function is activated, the head-cut to the far right of the cutting pattern is deleted. The function is only activated if there are no panels after the head-cut
		If this function is activated, the head-cut is shifted to the left in relation to the point clicked upon with the mouse, by a value equal to the parameter **"offset"**. The offset parameter may be positive or negative. The distance of shift depends on the available space after the parts already inserted
		Automatically insert a head-cut to the right of the pattern. N.B.:if the insertion is not carried out, see ***Maximum number of head-cuts*** in Parametri di ottimizzazione (Optimization parameters)
		Erase off-cuts from the displayed cutting plan
		Insert an off-cut in all the areas of material in which the recovery of an off-cut is allowed. N.B.: if the off-cuts are not inserted or if the button is not enabled, see "*Function for recycle off-cuts*" in Configurazione generale (General Configuration)
		Insert an off-cut only in the selected area. N.B.: if the off-cuts are not inserted or if the button is not enabled, see "*Function for recycle off-cuts* in Configurazione generale (General Configuration)
	Ctrl + P	Print the data set on the screen
		Undo the last executed operation
		Update the drawing to remove any graphic impurities
		If this button is pressed with the mouse button, a panel related to cutting plan information is displayed/hidden on the left side of the window. See Pannello informativo piani di taglio (Cutting Plan Information Panel)
		If this button is pressed with the mouse button, a panel related to workpiece information is displayed/hidden on the left side of the window. See Pannello informativo pezzi (Workpiece information panel)
		If this button is pressed with the mouse button, a window with information on changes made to the workpieces is displayed/hidden. See Pannello informativo modifiche (Editing information panel)
		Display the pattern with the dimensioned parts with the measurements to be sawn
		This option allows the insertion of parts that generate a Z cut to be included or excluded
		Piece insertion mode.
	Ctrl + F4	Exit from programming page

Operation

To analyze and edit the cutting pattern, use the left mouse button directly on the design.
The pattern editing functions vary according to the selected editing mode, in particular, in the mode *by pieces* the functions of piece **Deletion** and **Insertion** are accessible.

Deletion of a piece from the pattern: to delete a piece, just position the mouse cursor over it and double left click or drag it outside the drawing and the piece is deleted from the pattern.

Cutting plan information panel



Code of job to which the selected cutting plan belongs

Net	Square meters of material calculated on finished panel measurements.
Gross	Square meters of used material
Waste 1	Percentage of waste on finished panel measurements
Waste 2	Percentage of waste calculating the surplus material in the net used (sawn measurements).
Waste 3	Percentage of waste calculating the surplus material and the off-cut.
Stack height	Stack height used to calculate the cycles
Time x 1	Total time to carry out all the cycles
Total time	Total time required by the operator to handle the pieces

Highlighted piece code

Selected piece with relative dimensions

Number of pieces present in the pattern

Identifies if the grain flag for the piece is active

The quantity obtained after optimization and the quantity requested prior to optimization respectively

Piece information panel

The piece information panel displays:

Information on material size

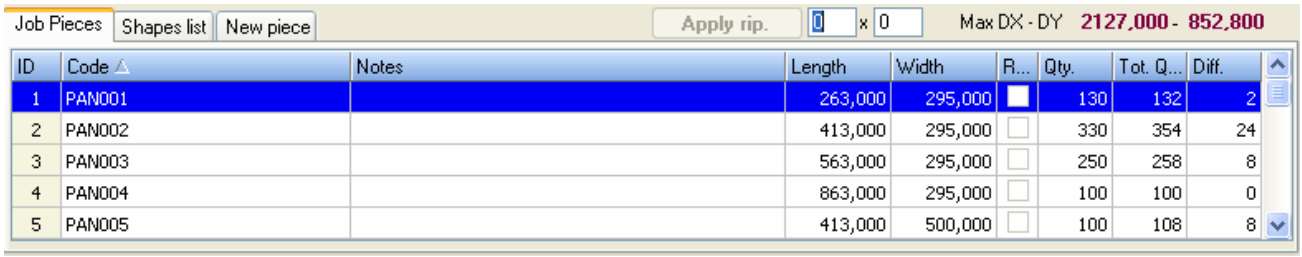
Materials Displays information related to the used material. If the material is of larger size, it may also be changed

Rep. Number of sheets for this cutting pattern. The data item may be edited manually; also the statistical data of use and production are consequently updated

Information related to the pieces

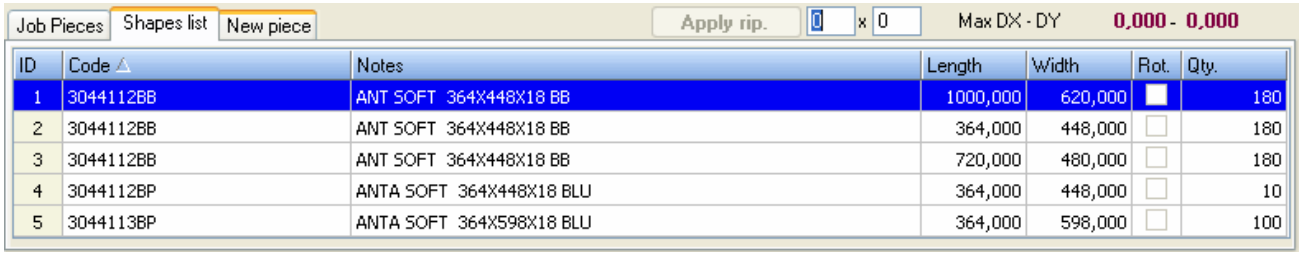
To insert pieces into an empty space in the pattern, just click in an empty space and the maximum dimensions of useable space are displayed in the workpiece information panel while data regarding the pieces belonging to the job or to the pieces stock that may be inserted are displayed in the "Job pieces" and "Pieces stock" tables. Any pieces that are inserted from the stock will be added to the job as new pieces or will increase the used quantities, code being equal.
There is a selection box in the tool bar that contains three modes: *Automatic, Rotated and Not Rotated*, which regulate the fact that the piece may be inserted rotated or not into the pattern (in any case observing if rotation of the actual piece is enabled or not). Display of the pieces that may enter the empty space depends on the mode selected in the toolbar; the pieces which respect the mode and which enter the empty space are displayed in the list. Upon selecting the *automatic* mode, panels that may be inserted are displayed according to how they are enabled for rotation.
The selected pieces may be inserted singly through a double click on the corresponding row of the table or through the button <*Apply Rep.*> bottom center of the window, which inserts a number of parts equal to the set *repetitions*.

Job pieces



ID	Code	Notes	Length	Width	R...	Qty.	Tot. Q...	Diff.
1	PAN001		263,000	295,000		130	132	2
2	PAN002		413,000	295,000		330	354	24
3	PAN003		563,000	295,000		250	258	8
4	PAN004		863,000	295,000		100	100	0
5	PAN005		413,000	500,000		100	108	8

Pieces stock



ID	Code	Notes	Length	Width	Rot.	Qty.
1	3044112BB	ANT SOFT 364X448X18 BB	1000,000	620,000		180
2	3044112BB	ANT SOFT 364X448X18 BB	364,000	448,000		180
3	3044112BB	ANT SOFT 364X448X18 BB	720,000	480,000		180
4	3044112BP	ANTA SOFT 364X448X18 BLU	364,000	448,000		10
5	3044113BP	ANTA SOFT 364X598X18 BLU	364,000	598,000		100

The tables, Job workpieces and Stock consist of the following columns:

Code
Mnemonic code assigned to the part.

Description
Brief description assigned to the part. The field may be left empty.

Length
Part length.

Width
Part width

Required
Number of pieces required for the part.

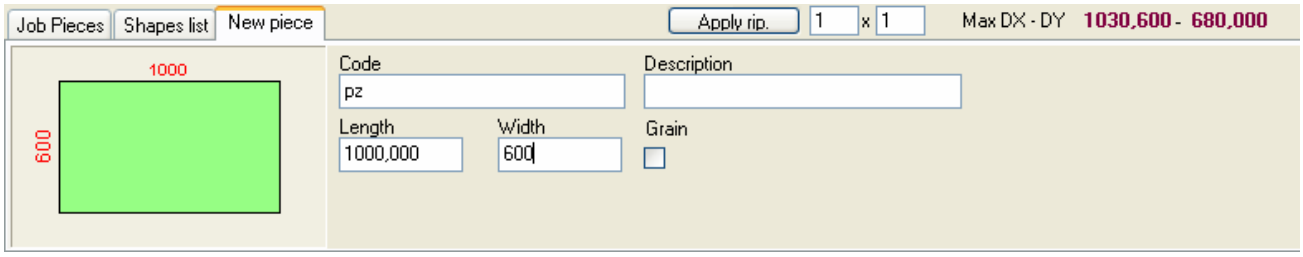
In the Job workpieces table there are also

Tot. qty. Number of used workpieces

Diff. Difference between requested and obtained workpieces

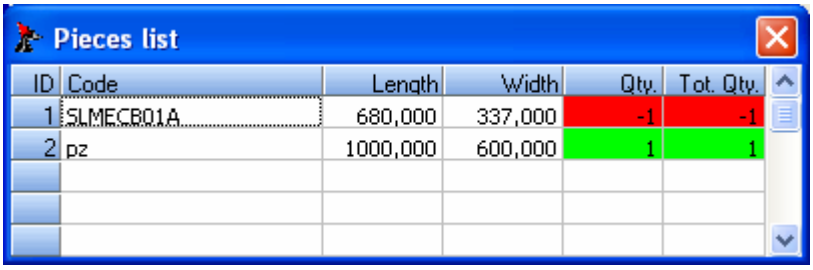
By clicking with the right mouse button in the fixed line, it is possible to order the selected column. The following image , which represents the order that has just been selected in the table, appears in the fixed line.

New Piece
If it is decided not to insert any of the proposed pieces, but to insert a new piece, just select the new piece button instead of the table and a panel appears in which the code, the length, the width and the repetitions of the new part may be manually digitized and the data confirmed using the button < *Apply Rep.*>. The inserted piece may also be reused subsequently and the relative production data will appear in the report. For a new piece that is a function of a part, firstly select the required part (the overall dimensions of the new piece) will be updated), give it a code and then proceed as above.



Editing information panel

The window displays information related to changed pieces, marking the removed pieces in red and the inserted pieces in green.



Select a piece from the list to enable the button “Apply Rep.” and click on the latter to insert the selected piece into the pattern in question

N.B.

- To select the cutting patterns, use the vertical scroll bar located on the right of the pattern drawing
- If the function *Recycle off-cuts* (parameter 7A of general configuration) is activated, any off-cuts determined by the program will be shown in yellow and will disappear in the *edit* mode.
- The number in the center of the parts is the progressive number of the part in the insertion list, if the function *Compacting equal measurements* (parameter *5A* of Configurazione generale General Configuration) is not enabled, otherwise the number of reference in the list of compacted measurements.
- If there is the letter “R” alongside the number, the part has been inserted into the pattern rotated by 90° in relation to the dimensions inserted in the list (only for non-grained parts).
- A piece may be shifted from one part to another of the pattern by selecting the piece and dragging it with the mouse into the free space in question.
- A piece may be shifted by rotating it from one part to another of the pattern by pressing the CTRL key and at the same time selecting the piece and dragging it with the mouse into the free space in question.

Import

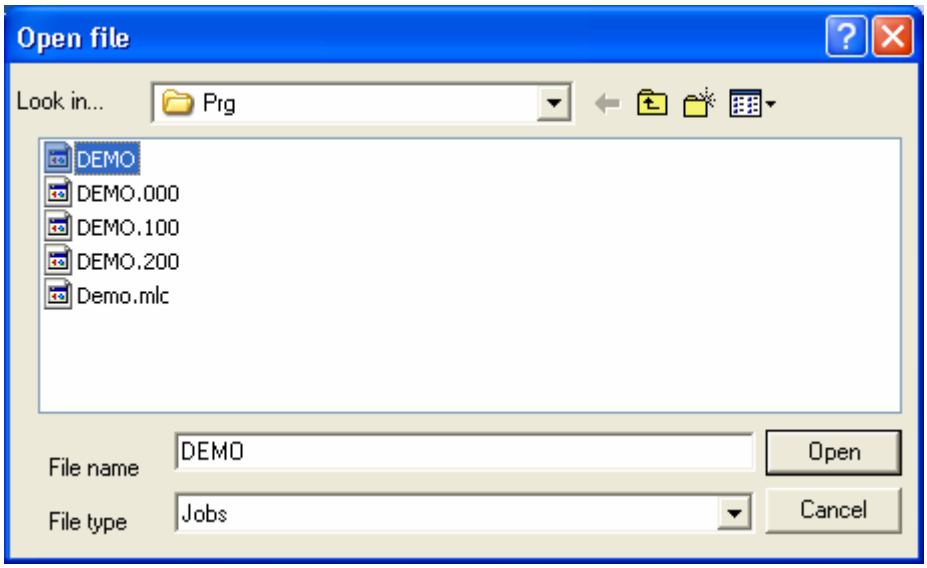
Programming lists may be inserted in Ottimo in various ways:

- **Manually,** by editing job programming pages
- **Office**, by using EasyCut, EasyCabinet programs, materials lists managed with spreadsheets may be imported
- **Import**, to import formats coming from external sources.

The following import functions are grouped together under the menu "*Import*":

- *Import from text file (imports job from a specific text format, see text file format APPENDIX)*
- *Import from OptiSave (imports job in specific OptiSave format*)
- *Import from OptiWin5 (imports job in specific OptiWin5 format)*
- *Import from Wincut (imports job in specific Wincut format)*
- *Import from Wincut Plus (imports job in specific WincutPLUS format)*
- *Import from CPOUT (imports job in specific CPOUT format)(Optional)*

Upon selecting any one of these items under the menu, the following window is displayed:

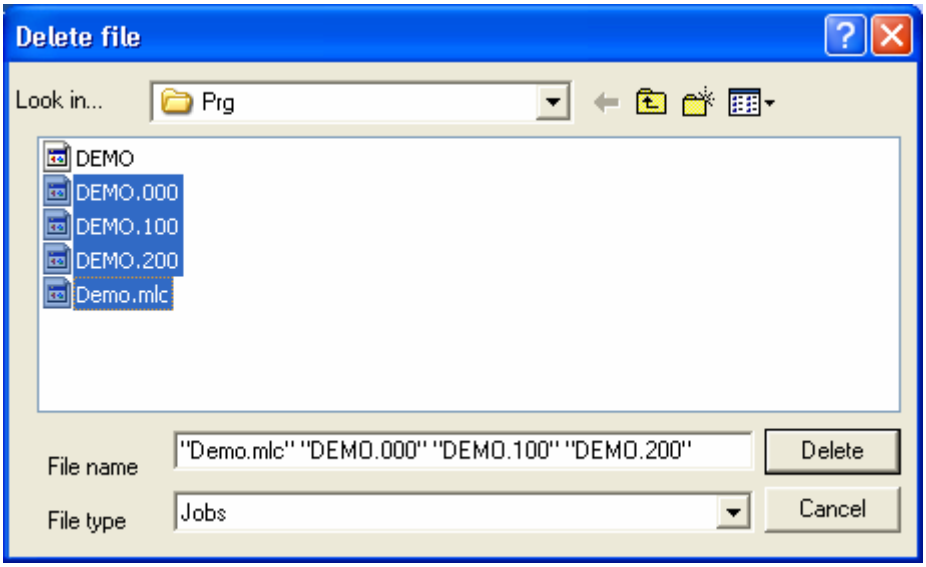


Operation	
Look in …	Path set through the parameter "*Path for import file*" in general configuration for reading files to be imported.
File name	Name of file to be imported
Type of file	Display file by extension, that is, by type of import to be carried out
Import	Confirm import operation
Undo	Undo import operation

Delete

The function is accessible from the item *Delete* in the job menu or using the keys *Ctrl+Del* and it allows one or more job or multi-job files stored in the path of the programs to be deleted.

Upon selecting the function, the following window is displayed:



Operation

Use of the window is intuitive; after having selected from the list the job text files to be deleted, just confirm by using the button *Delete*: the selected job or multi-job files will be deleted.
To undo the operation use the button *Undo*.

N.B. Data related to the deleted files will be effectively lost

Multi-job programming

This section illustrates the available functions for programming and managing the multi-job lists for which the cutting plans are to be optimized. In addition to programming the data related to the multi-job lists, the print, import from formatted text file, paste and deletion of jobs in archive functions as well as the optimization and statistical reports of cutting data are available.

The multi-job function is important for the following reasons:

- It allows panel lists of different, i.e. in color and thickness, materials to be managed;
- The original list inserted by the operator is broken down into homogeneous material lists handled separately for machining purposes, but as a whole for the reports and production costs;
- It allows supplementary information to be handled, such as non-standard labeling data.

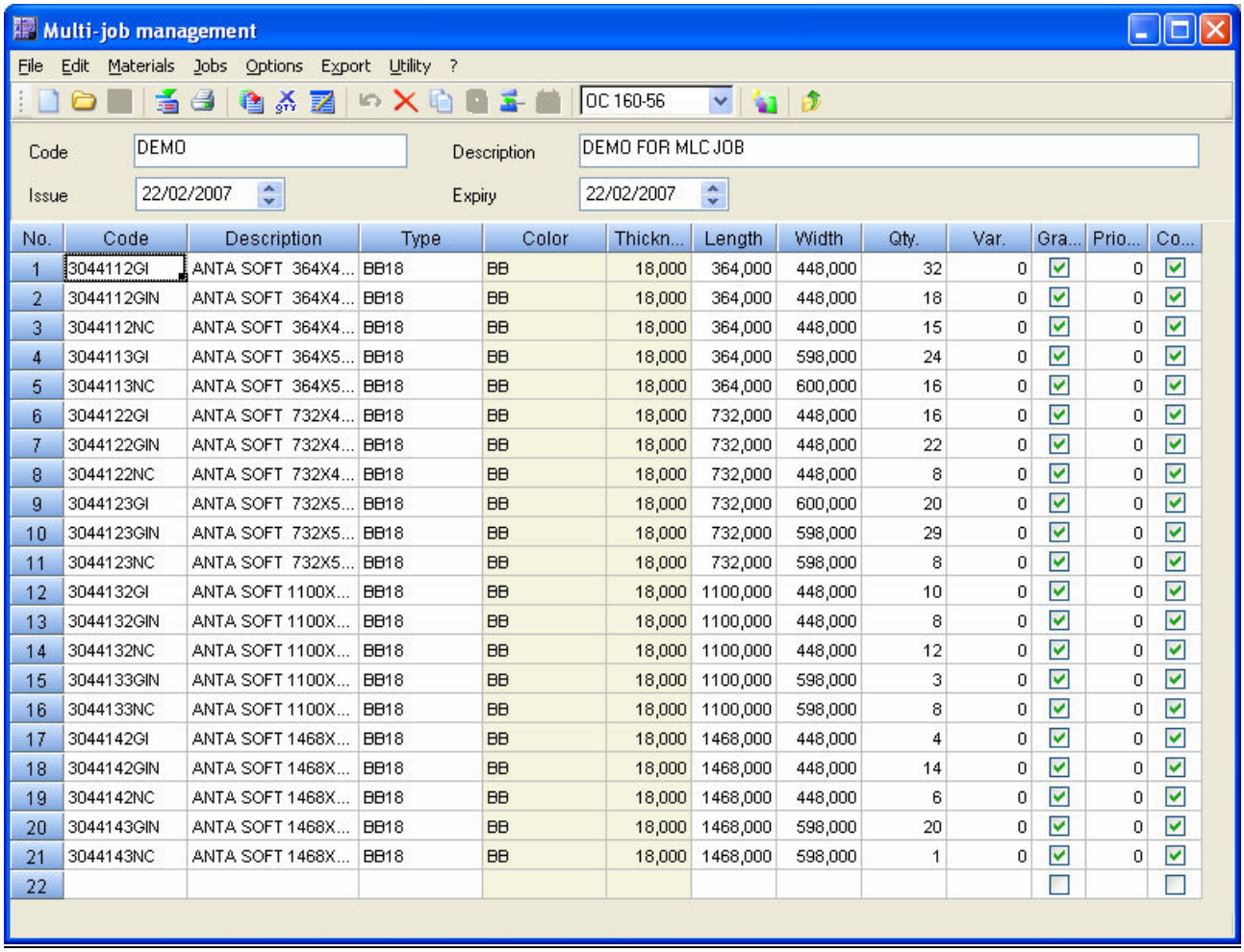
The operations to optimize the data of a multi-job should be carried out in the following order:

1. Programming the data related to the heading and to the parts of the multi-job (compulsory);
2. Processing the inserted panel list to obtain the homogeneous jobs by material;
3. Editing the default optimization parameters and the material associated with the job (optional);
4. Optimizing the job cutting plans (compulsory).

The multi-job programming page is accessible through the sub-items *New* and *Open* of the *Multi-job* menu title in the *Jobs* menu or through the shortcut keys F5 or Shift+F5.
There are therefore two methods of access (Ref. section: *Job management*):

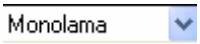
- Selecting the function *New* an empty programming page is opened and data for a new job can therefore be programmed.
- Selecting the function *Open* access is gained to the *Open file* window and from here an existing list can be selected.

The multi-job file list programming page layout is as follows.



No.	Code	Description	Type	Color	Thickn...	Length	Width	Qty.	Var.	Gra...	Prio...	Co...
1	3044112GI	ANTA SOFT 364X4...	BB18	BB	18,000	364,000	448,000	32	0	☑	0	☑
2	3044112GIN	ANTA SOFT 364X4...	BB18	BB	18,000	364,000	448,000	18	0	☑	0	☑
3	3044112NC	ANTA SOFT 364X4...	BB18	BB	18,000	364,000	448,000	15	0	☑	0	☑
4	3044113GI	ANTA SOFT 364X5...	BB18	BB	18,000	364,000	598,000	24	0	☑	0	☑
5	3044113NC	ANTA SOFT 364X5...	BB18	BB	18,000	364,000	600,000	16	0	☑	0	☑
6	3044122GI	ANTA SOFT 732X4...	BB18	BB	18,000	732,000	448,000	16	0	☑	0	☑
7	3044122GIN	ANTA SOFT 732X4...	BB18	BB	18,000	732,000	448,000	22	0	☑	0	☑
8	3044122NC	ANTA SOFT 732X4...	BB18	BB	18,000	732,000	448,000	8	0	☑	0	☑
9	3044123GI	ANTA SOFT 732X5...	BB18	BB	18,000	732,000	600,000	20	0	☑	0	☑
10	3044123GIN	ANTA SOFT 732X5...	BB18	BB	18,000	732,000	598,000	29	0	☑	0	☑
11	3044123NC	ANTA SOFT 732X5...	BB18	BB	18,000	732,000	598,000	8	0	☑	0	☑
12	3044132GI	ANTA SOFT 1100X...	BB18	BB	18,000	1100,000	448,000	10	0	☑	0	☑
13	3044132GIN	ANTA SOFT 1100X...	BB18	BB	18,000	1100,000	448,000	8	0	☑	0	☑
14	3044132NC	ANTA SOFT 1100X...	BB18	BB	18,000	1100,000	448,000	12	0	☑	0	☑
15	3044133GIN	ANTA SOFT 1100X...	BB18	BB	18,000	1100,000	598,000	3	0	☑	0	☑
16	3044133NC	ANTA SOFT 1100X...	BB18	BB	18,000	1100,000	598,000	8	0	☑	0	☑
17	3044142GI	ANTA SOFT 1468X...	BB18	BB	18,000	1468,000	448,000	4	0	☑	0	☑
18	3044142GIN	ANTA SOFT 1468X...	BB18	BB	18,000	1468,000	448,000	14	0	☑	0	☑
19	3044142NC	ANTA SOFT 1468X...	BB18	BB	18,000	1468,000	448,000	6	0	☑	0	☑
20	3044143GIN	ANTA SOFT 1468X...	BB18	BB	18,000	1468,000	598,000	20	0	☑	0	☑
21	3044143NC	ANTA SOFT 1468X...	BB18	BB	18,000	1468,000	598,000	1	0	☑	0	☑
22										☐		☐

Available functions in the tool bar

Icon	Shortcut	Description of function
	F5	Open a new list
	Shift + F5	Open an existing list
	Ctrl + S	Save data set on the VDU; existing data will be overwritten
		Import from ASCII file
	Ctrl + P	Print data related to the displayed materials
		Paste the data of panels coming from an existing job
		Multiply the required quantities by the whole number inserted
	Ctrl + X	Delete the selected lines of the table (in blue)
	Ctrl + C	Copy the selected lines of the table (in blue)
	Ctrl + V	Paste the previously copied lines at the end of the table (append)
		Insert a line above the selected line
		Select the machine profile to be associated with the multi-job for time calculation
	F7	Process the list
	Ctrl + F4	Exit from the programming page

Additional functions

Refer to the section *"Using the keyboard"* at the beginning of this manual.

The display page is divided into two sections: the first, in the top part of the window, is the page heading and contains the controls for the general data related to the job; the second, in the remaining part of the window, contains the programming table of data related to the parts to be produced.

Heading fields

Code **no limit**
Mnemonic code to be assigned to the job; this corresponds to the name of the file in which the data will be saved. To create replicas of the job on disk, just edit this field and save the data.
N.B. The inserted job code can only have the "MLC" extension; the program in any case automatically inserts the MLC extension as default.

Description **max 50 characters**
Brief description of the job. The field may be left empty.

Issue **Date field**
Job order date of issue.

Expiry **Date field**
Job consignment expiry date.

Description of fields of the programming table

Code **max 20 characters**
Mnemonic code assigned to the part.

Description **max 25 characters**
Brief description assigned to the part. The field may be left empty.

Type
Material type. By selecting this field, also information related to the color and thickness is displayed.

Color
Color of the selected type. This field cannot be changed.

Thickness
Thickness of the selected type. This field cannot be changed.

Length **min = 1 max = 6500**
Part length

Width **min = 1 max = 6500**
Part width

Required **min = 0 max = 32767**
Number of required pieces for the part.

Qty. Var. **min = 0 max = 32767**
"Quantity Variation". Maximum surplus quantity to be produced for the part. It replaces the value set in configuration.

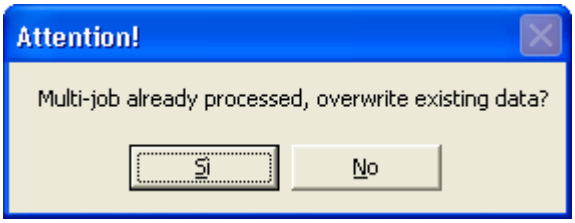
Grain **0/1**
This contains information on the grain of the part and indicates whether the part may be rotated in the cutting plans (cell not selected) or not (cell selected).

Priority **min = 0**
Priority assigned to the workpiece so that it is used first during optimization

Composition
Contains information regarding the composition of the workpiece, indicating whether the piece can be composed at unloading ☑ or not ☐. If the workpiece cannot be composed, the workpiece is unloaded one by one or according to the compositions set by external programs. E.g. EasyCut.

Processing.

When this function is activated, the parts list is processed and as many jobs are created as there are types identified by the list. The name of the jobs is composed from the name of the multi-job, the thickness of the type, the color of the type and an extension made up by a progressive alphanumeric code (.000, .100, .200, .300, ..., .a00, b00, ...).
For each resulting job, a default configuration is associated as well as the first material present in stock having the same type as the parts of the job.
If the function is activated with a list already processed, the following window is displayed:



Operation

This window has two operating possibilities:
1 - if " NO " is pressed, the existing jobs are opened with the data processed previously.
2 - if " YES " is pressed, a new association of the material is made and the default configuration is assigned again; any previously processed data will be lost.

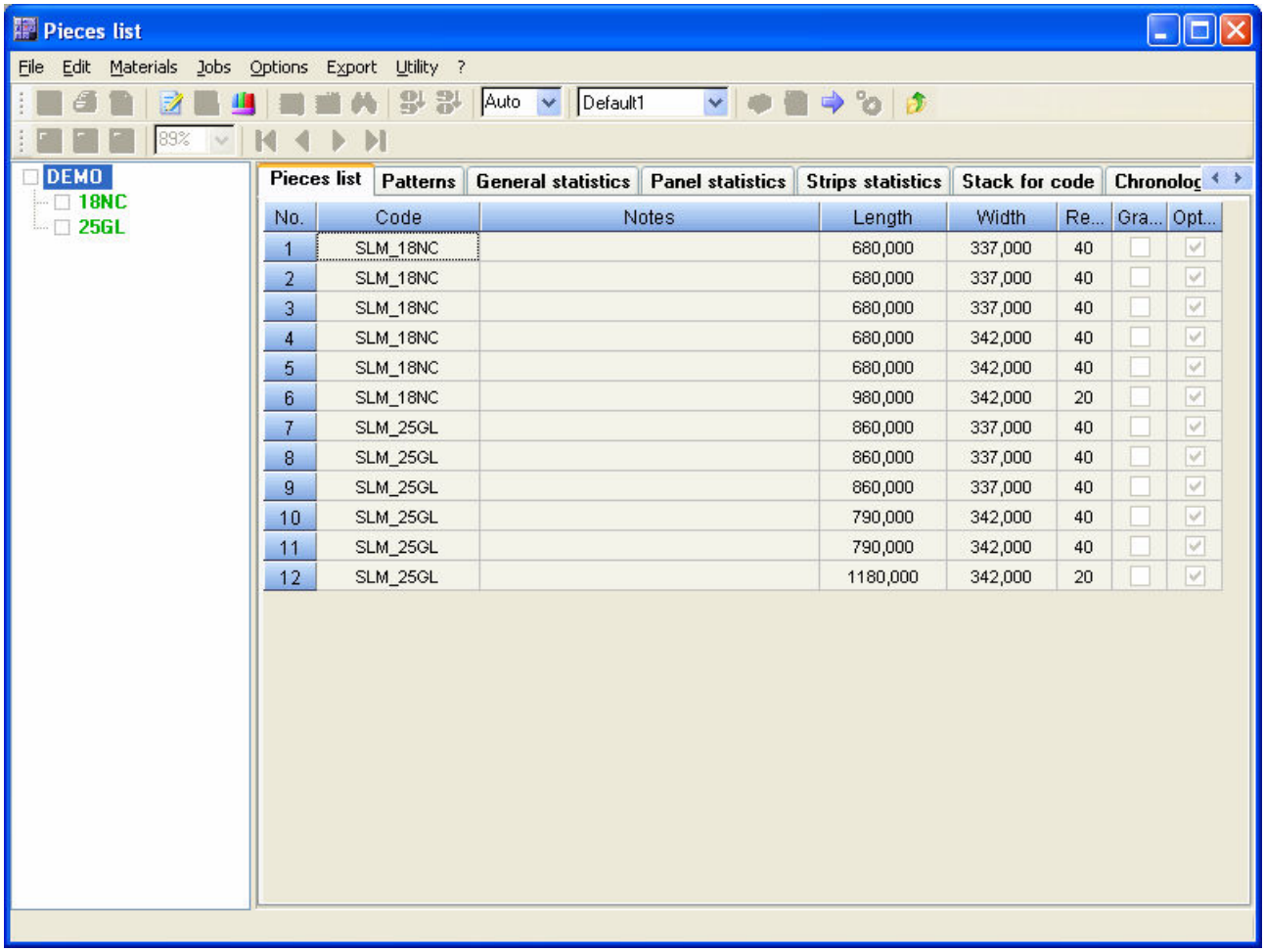
Upon closing the window using one of the two keys described above, the program accesses the page *Multi-job management* described on the next page.

Multi-job management

Refer to the section Analizza. (Analyze) of the job programming page. The function "*Multi-job Report"* can be accessed from this page *using the button*

Consult the *"Using the keyboard"* section at the beginning of this manual.

The list of types present in the exploded job can be seen in the tree on the left; upon selecting a job, a table containing the part of job pieces with the same type is displayed for reading only in the right part of the window.



No.	Code	Notes	Length	Width	Re...	Gra...	Opt...
1	SLM_18NC		680,000	337,000	40		
2	SLM_18NC		680,000	337,000	40		
3	SLM_18NC		680,000	337,000	40		
4	SLM_18NC		680,000	342,000	40		
5	SLM_18NC		680,000	342,000	40		
6	SLM_18NC		980,000	342,000	20		
7	SLM_25GL		860,000	337,000	40		
8	SLM_25GL		860,000	337,000	40		
9	SLM_25GL		860,000	337,000	40		
10	SLM_25GL		790,000	342,000	40		
11	SLM_25GL		790,000	342,000	40		
12	SLM_25GL		1180,000	342,000	20		

No.: progressive piece number of the job

Code, Notes, Length and Width basic data of the piece

Quantity Displays the total quantity to be processed, obtained from the fields *Qty* and *Qty x 1* of the job

Optimize This allows the single selection of pieces to be optimized; when it is not selected the quantity to be processed is equal to 0.

Operation

The types tree uses the colors red and green to display the status of every type (to be optimized and optimized respectively) and allows selective processing through the checkbox to the left of each item. When the job code "**DEMO**"(blue background) is active, however, the whole job not divided by types is displayed in the table on the right and cannot be edited in any way.

Clicking on the *Associate materials* function in the toolbar, access is gained directly to the material association of the selected job.
Clicking on the *Configuration* function in the toolbar, access is gained directly to the optimization parameters of the selected job.

N.B. The functions *Process and Unload stock* act on the selected jobs (checkbox), the functions *Configuration*, *Associate materials* and *Analyze results* act on the active jobs (blue background).

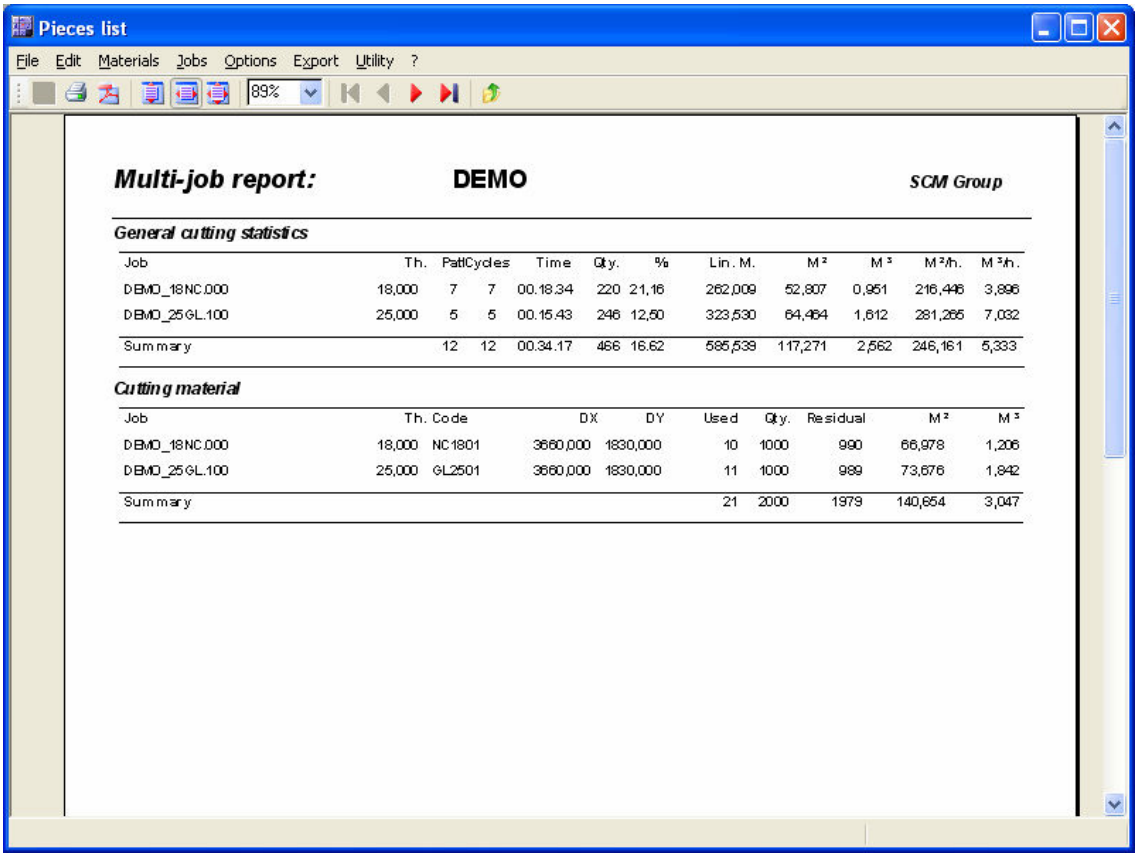
- By using the "Deselect All" from the tool bar;

Certain pieces may be enabled/disabled by clicking in the "ON" column for every selected job when processing the same

N.B. The functions *Process and Unload stock* act on the selected jobs (blue background), the functions *Configuration*, *Associate materials* and *Analyze results* act on the active jobs (highlighted).

Multi-job report

This displays a window with the statistical reports related to the production of the whole multi-job. The page is just for reading and has the following layout:



The first pages of the report give the statistical data of each job obtained from the processing; the last page gives the summarizing data of the entire multi-job.

Available functions in the tool bar

Icon	Shortcut	Description of function
	Ctrl + S	Update and save the data related to the cutting patterns
	Ctrl + P	Statistics: print the page of the active statistics
		Statistics: save the active statistics page in PDF format
		Statistics: resize to window height
		Statistics: resize to window width
		Statistics: same size as sheet
38%		Statistics: percentage zoom
		Statistics: go to first page
		Statistics: go to previous page
		Statistics: go to next page
		Statistics: go to last page

Description of fields of the reports

For the first detailed statistics pages for each job, see General Statistics.
The summarizing section gives the following fields:

A table with the general cutting statistics that has the following fields for each job:

Job: Job code

Color: Material color

Thickness: Material thickness

Patt: Number of obtained patterns.

Cycles: Total number of cycles

Time: Total estimated machine time for executing all the patterns

Qty: Total number of boards produced.

%: Total percentage of waste.

Lin. m: Estimated total linear meters of cutting for the job.

M^2 : Total square meters of parts produced

M^3 : Total cubic meters of parts produced

M^2 /h : Square meters produced per hour

M^3 /h : Cubic meters produced per hour

The following data are given for each board of material used by the job:

Job: Job code

Color: Material color

Thickness: Material thickness

Code: Code of the board of material

DX: Length of the board of material

DY: Width of the board of material

Used : Quantity used for the board of material

Qty : Quantity in stock

Remainder : Quantity in stock less the quantity used

M^2 : Total square meters of material

M^3 : Total cubic meters of material used

Patterns Archive

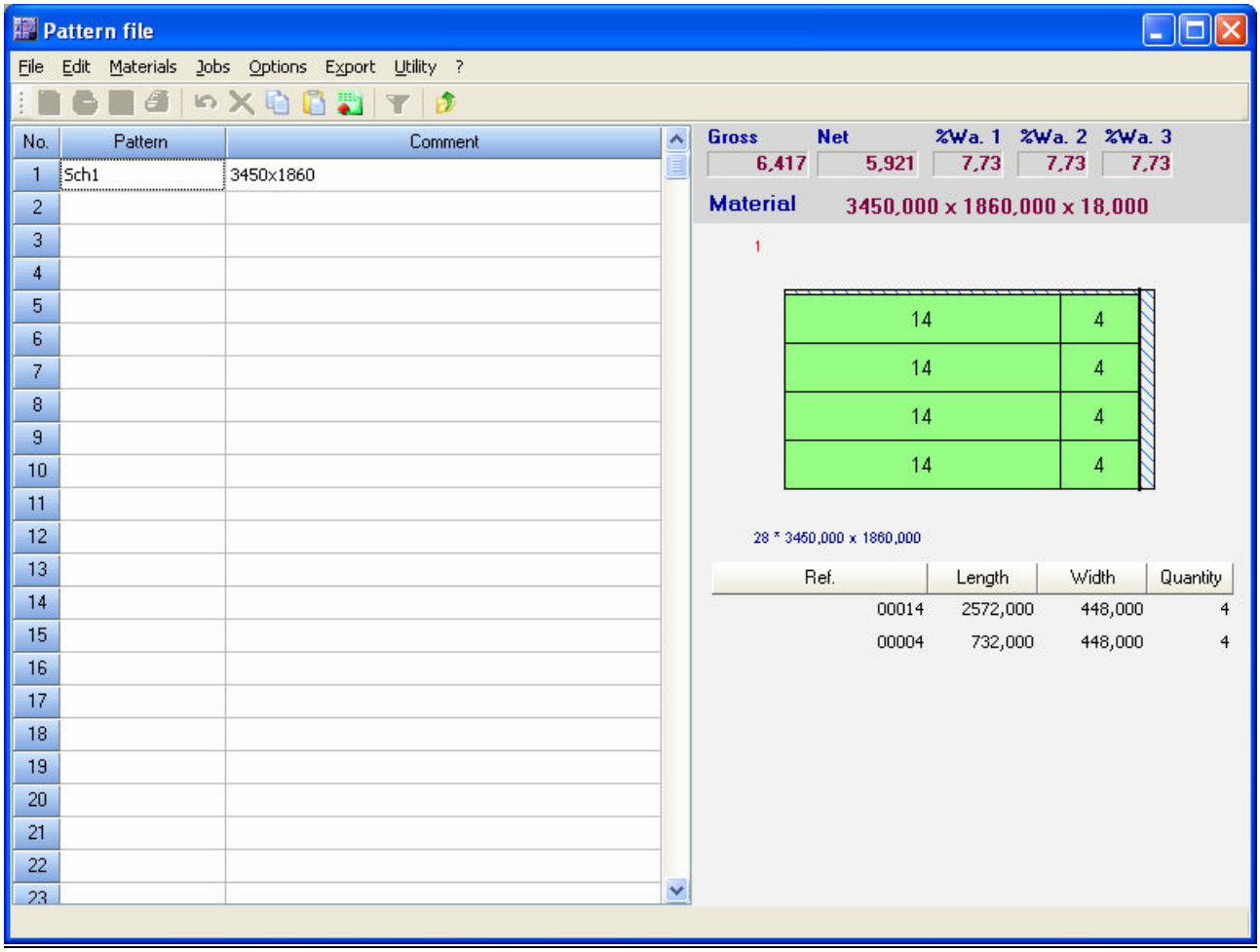
This section illustrates the available functions for managing a patterns archive.

The patterns archive function is important because it allows lists of patterns to be managed with known characteristics of off-cuts and production of pieces.

The operations that allow management of a patterns archive are:
1. Storage of the pattern from the “Analyze” or the “Pattern Analyze” page with a code and a personal description.
2. Display of the patterns and their characteristics from this page.
3. Adding filed patterns to the active job. When a pattern is added to the active job, the pieces which make up the pattern change the job piece list. In other words if a panel of the pattern to be inserted is the same size as a panel already present in the job, the quantity obtained of the latter will be increased, otherwise a new panel will be inserted in the list with the required quantity equal to zero and quantity obtained equal to the quantity of the cutting pattern to be inserted for the number of sheets to be cut.
4. Deleting of the patterns from archive.

The listed functions are accessible from the edit menu.

The page layout for managing the Patterns Archive is shown below.



Available functions in the toolbar

Icon	Shortcut	Description of function
	Ctrl + X	Delete the selected lines of the table (in blue)
		Insert the pattern into the active job
		Displays patterns of the open job with equal thickness
	Ctrl + F4	Exit from the programming page

Additional functions

Refer to the section *"Using the keyboard"* at the beginning of this manual.

The display page is divided into two sections: the first, in the left part of the window, is the management of the true patterns list and contains a table with all the codes and the description of every stored pattern; the second, in the remaining part of the window, displays the data of the selected pattern.

Fields of the table

Code **max 20 characters**
Mnemonic code assigned to the pattern.

Description **max 60 characters**
Brief description of the pattern. The field may be left empty.

Description of fields in the right section of the screen

Total gross : Total square meters of used material.

Net: Total square meters of used material less the waste.

% Waste: Percentage waste. Ratio between total surface area of the used materials and total parts (finished measurement).

% Waste (2): Percentage waste also calculating the surplus material in the obtained net (parts cut measurement).

Material: Size of the material used in the pattern

Fields of the pieces list

Ref.: Reference of the part in the design.

Length: Length of the part.

Width: Width of the part.

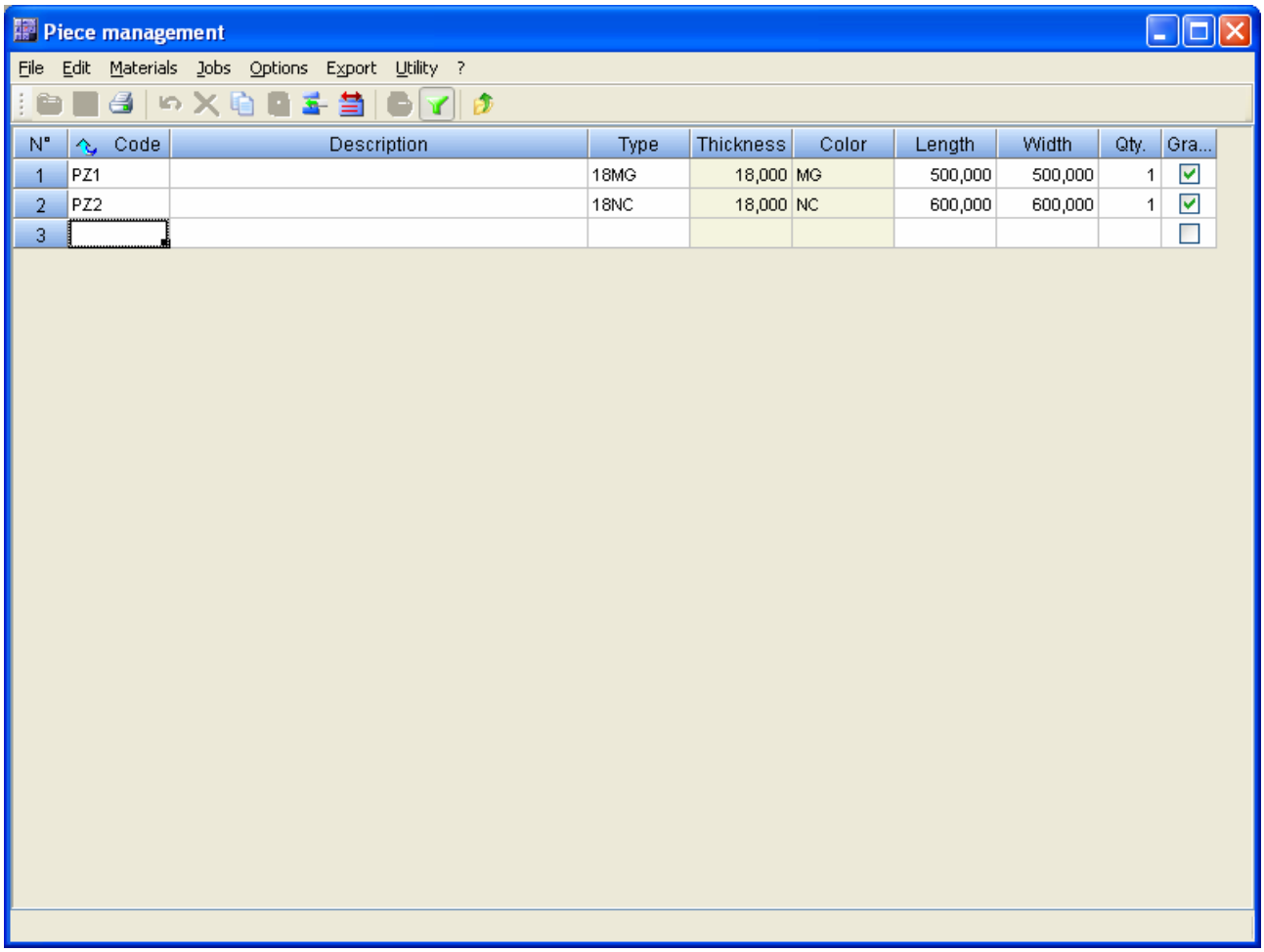
Qty Quantity of pieces contained in the pattern

Pieces list

This section illustrates the available functions in the manual filling list.

The function of the manual filling list is to manage a parts archive for use in manual change in order to fill a pattern.

The page layout for managing the Patterns Archive is shown below.


Piece management
File Edit Materials Jobs Options Export Utility ?
N° Code Description Type Thickness Color Length Width Qty. Gra...
1 PZ1 18MG 18,000 MG 500,000 500,000 1
2 PZ2 18NC 18,000 NC 600,000 600,000 1
3

Available functions in the toolbar

Icon	Shortcut	Description of function
	Ctrl + P	Print data related to the panels list
	Ctrl + S	Save data set on the VDU; existing data will be overwritten
	Ctrl + X	Delete the selected lines of the table (in blue)
	Ctrl + C	Copy the selected lines of the table (in blue)
	Ctrl + V	Paste the previously copied lines at the end of the table (append)
		Insert a line above the selected line
		Set the table columns with a fixed width. Activation of the button depends on the general configuration
		Filters job pieces. If there is a loaded program, all the pieces with nil thickness or empty color or with the same color and thickness are displayed
		Send selected pieces to the job. If the pieces have already been inserted the quantities are added together
	Ctrl + F4	Esce dalla pagina di programmazione

Additional functions

Refer to the section *"Using the keyboard"* at the beginning of this manual..

Description of fields of the programming table

Code **max 12 characters**
Mnemonic code assigned to the part.

Description **max 25 characters**
Brief description of the part. The field may be left empty.

Type
Material type. By selecting this field, also information related to the color and thickness is displayed.

Color
Color of the selected type. This field cannot be changed.

Thickness
Thickness of the selected type. This field cannot be changed.

Length **min = 1** **max = 6500**
Length of the part

Width **min = 1** **max = 6500**
Width of the part
N.B.: the limits for length and width may be set in general configuration through the respective parameters "*Length/Width for piece*"

Grain
This contains information on the grain of the part and indicates whether the part may be rotated in the cutting plans (☐ or not ☑

Program export

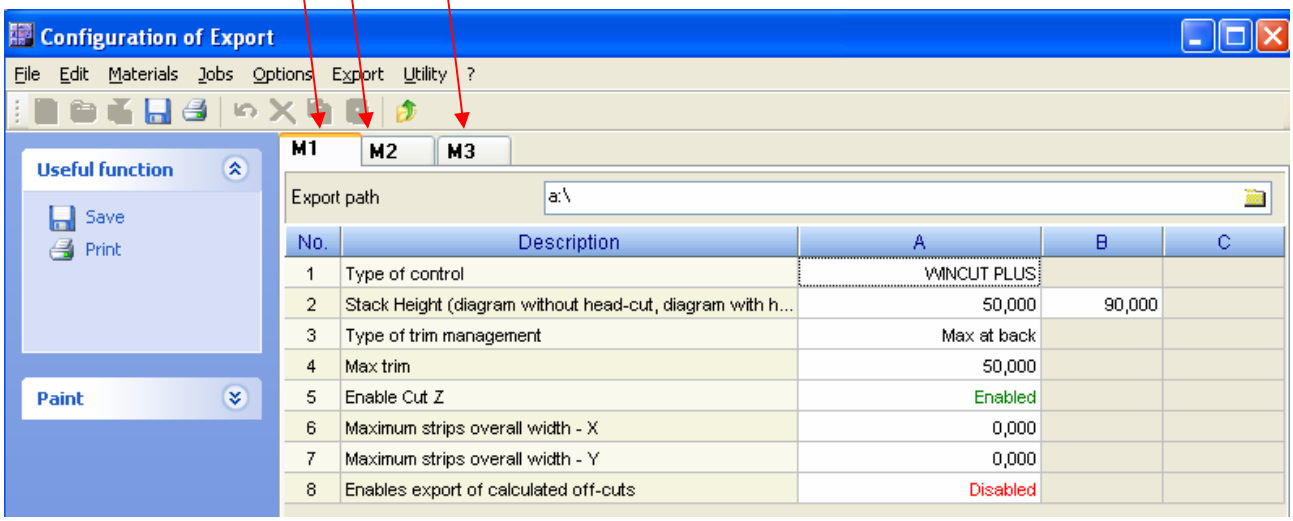
All the functions for sending previously optimized cutting programs to the panel saw control are collected under this menu item.

Operating functions

- MACHINE PARAMETERS.
- SEND PROGRAMS.

Machine Parameters

The function is accessible from the *Machine parameters* item of the Export menu and allows the export parameter configuration parameters to be programmed.
It is only possible to export patterns of a job simultaneously to two controls with the ANGULAR-PLUS version, the data being set in the files M1, M2 and M3
The page has the following layout:


Configuration of Export
File Edit Materials Jobs Options Export Utility ?
Useful function
Save
Print
Paint
M1
M2
M3
Export path
a:\
No. Description A B C
1 Type of control WINCUT PLUS
2 Stack Height (diagram without head-cut, diagram with h... 50,000 90,000
3 Type of trim management Max at back
4 Max trim 50,000
5 Enable Cut Z Enabled
6 Maximum strips overall width - X 0,000
7 Maximum strips overall width - Y 0,000
8 Enables export of calculated off-cuts Disabled

Available functions in the tool bar

Icon	Shortcut	Description of function
	Ctrl + P	Print the data set by VDU
	Ctrl + S	Save the data set by VDU
	Ctrl + F4	Exit from the configuration page

The display page is divided into two sections: the first, in the upper part of the window, is the page heading and contains the choice of the directory of destination of the job for export; the second, in the remaining part of the window, contains the configuration parameter programming table.

Heading fields

Export path: this is used for manually inserting or selecting the path in wich the export will write the produced files. To set the path using the button, after selection of the same the standard file selection window appears with which the directory may be selected using the mouse.

Machine parameters

Type of control: Type of control for which the data should be prepared. The available types of control are: E.d.g 1/E.d.g.2, E.d.g.3, E.d.g.3.4x, E.d.g. Ang 1, ESA-GV Tria 4000/6000, ESA-GV Ar.02.04/Cr.01.09, Xilia X1000, Master X/Plus, Master J, Master S, Standard ASCII, AXIOMA1, WINCUT1, WINCUT PLUS,
Wincut Plus Rel. >=5.30

Max. space between two grippers: (min=0 - max=65000): considering that there is sometimes no thrust support between the pusher arms and that a piece that is smaller than the space may not be pushed forward. This parameter is the greatest distance among all the inter-gripper spaces.

Gripper maximum dimension of continuity: (min=0 - max=65000): Like the preceding parameter, this is the maximum dimension of continuity of support present on the cutting line. Together with the preceding parameter, the effect of the two together is to divide the logic cuts so that the situation never occurs where a piece is not pushed by the pusher and passes through 2 grippers.

Max. panels for stack: (min=1 - max=99): the maximum number of panels per stack that the control can manage.

Stack thickness (Pattern without head-cut, pattern with head-cut): (min=1 - max=999): this is the maximum thickness of the stack that the control can manage; the second value indicates the maximum stack thickness for a pattern with head-cut and is only used by Axioma to guarantee correct movement of the stack.

Type of trim : this indicates in what way the division of the trims is done. The possible ways are: Max at Head and Max at Tail. The trim is put half at the front and half at the back up to a max. defined by the following parameter and everything that remains at the front or the back according to the selected type.

Max trim: (min=1 - max=9999): this indicates the maximum back or tail value for dividing the trim.

Lift table presence: (enabled, disabled): this indicates that the machine is using the lift table. It serves for the board size to be referred to the control for the dimensions of the material. Only used with the Master X/Plus.

On-Off absolute cut: (enabled, disabled): used in certain controls to avoid the first cut with absolute value. When the option is not selected, the first cut (front trim) is not carried out, but the cutting sequence starts immediately from the second.

Options 11A, 12A, 13A, 14A and 15A are only necessary when the control Ar.02.04 / Cr.01.09 is used and they indicate the configuration of the communication port. For this control in particular, they should be set exactly as indicated below.

Port = COM1
Baud rate = 9600
Parity = EVEN
Data bit = 8
Stop = 1

Z cut enable (enabled, disabled): this indicates whether to convert the format towards the control with or without the Z cuts. Only used with the type of control E.d.g. Ang. 1.
CAUTION: if this option is not disabled and label data are present, the actual data can no longer be considered valid.!!!

Bars X side by side: (min=1 - max=9999): this indicates up to what size the bars X may be put side by side to carry out Z cuts.

Bars Y side by side: (min=1 - max=9999): this indicates up to what size the bars Y may be put side by side to carry out X cuts.
CAUTION : if Y side-by-side is activated, that is, the value for side-by-side is greater than 0, the 2 parameters "***Max space between two grippers"*** and "***Gripper maximum dimension of continuity***" are no longer considered due to incompatibility.

Enables export of calculated off-cuts : Allows export of calculated off-cuts as if they were normal parts so that they are not cut as off-cuts. Only used in the "Axioma" control.

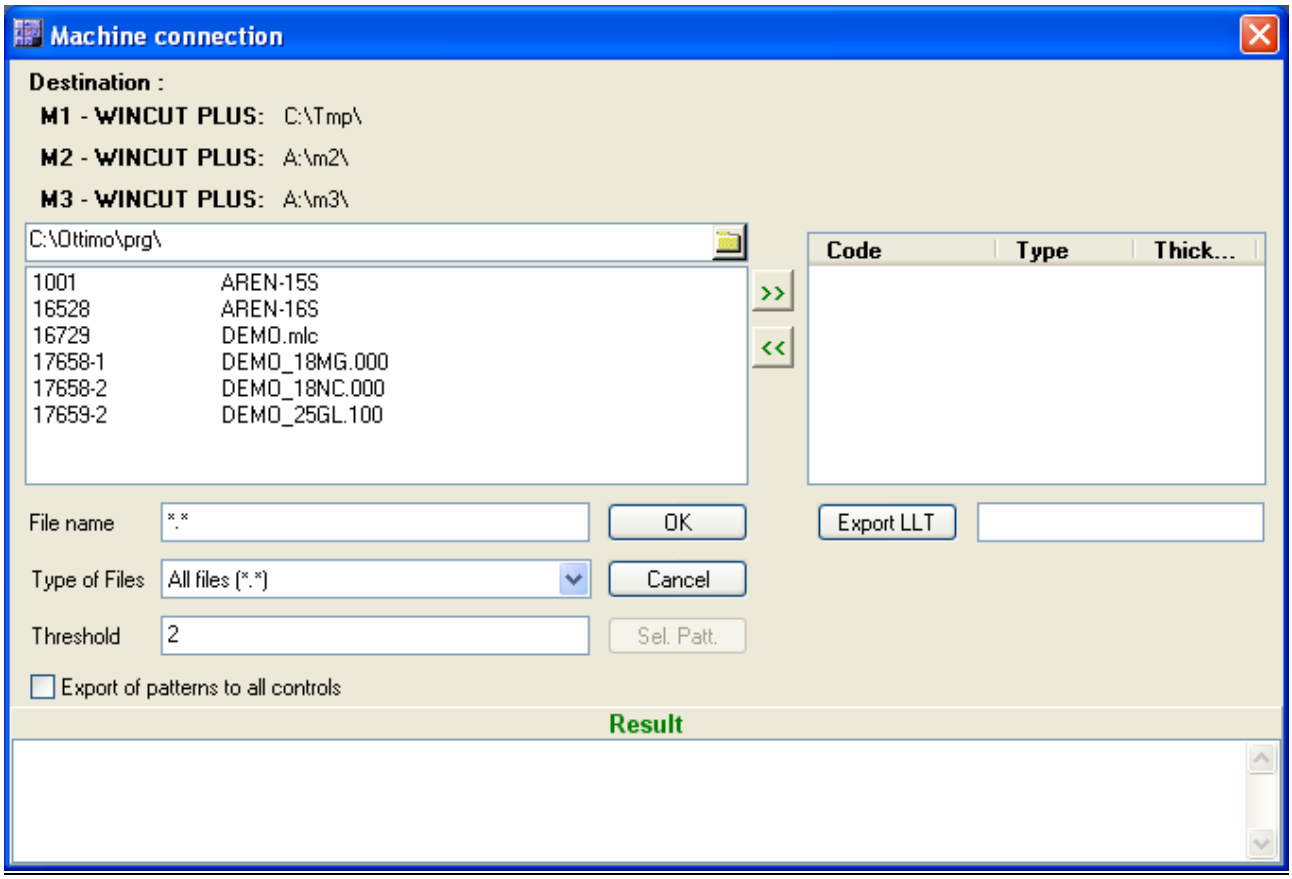
Rotation direction : Clockwise/anticlockwise rotation direction of precut

Operator position : Operator position for pieces collection. The position can only be right or left

Printer type : Type of printer to be used for printing the labels. The printer can be of two types: "ZEBRA Printer" or "Standard Windows printer".

Send programs

The function is accessible from *Send programs* in the Export menu or through key F8 or from the Tool Bar when the button is activated.
It allows the programs to be converted from the Ottimo format to the format of the selected control, thereby allowing automatic "link-up" between Ottimo and the machine.
The page has the following layout:



Operation

Use of the program is very simple and intuitive; after having selected one or more jobs to be converted, just confirm using the OK button.

The fields: **Destination 2, Threshold** and the button **Sel.Sch.** are **ONLY** available in the **ANGULAR-PLUS version.**
The right part of the window (list and LLT button) is only available in the WINCUT PLUS control.

Visible window fields

Destination:
In a non-editable field, it indicates, the machine to which the export refers, the control used for the export and the destination path of the converted files

File name: this indicates the name or names of the jobs to be converted; the names may be written manually in this field, but they must be inserted between <"> (inverted commas) and separated by a space.

When this page is opened with an active job, the code of the job appears in the "file name" field.

Result: this indicates whether the conversion has been successful or if an error has been given and which, for each selected job.

Threshold: this indicates the criterion for dividing up the schemes between M1 and the M2 control; the schemes that have a number of sheets less than or equal to the threshold value are exported to M2 control and vice versa.

Sel.Sch.: select this option to enter a window for manually selecting the diagrams to be sent to the 2 controls. The page presents all the diagrams with indication of the destination control at the bottom right of each one that is selected according to the "Threshold"criterion; with a double click on a diagram, the user may now change the destination of the same.

At the end of the selection the user decide whther to save the change (icon with diskette) or not (exit icon).
The schemes are divided between the M1, M2 and controls according to the changes made.
">>"and "<<" buttons: these are used ti remove and transfer the selected job from one list to another.
LLT export: by using this function it is possible to transfer all the jobs inserted in the list above the button into a single work list regardless of the difference in the type (thickness and colour) of material.
The name of the LLT list may be set in the field to the right of the button.

Export programs to all machines, only available in the PLUS version of he optimiser. If enabled, all programs are sent to all controls, as set in the Export parameters

Utilities

All the accessory functions of the program are collected under this menu item.

Operating functions

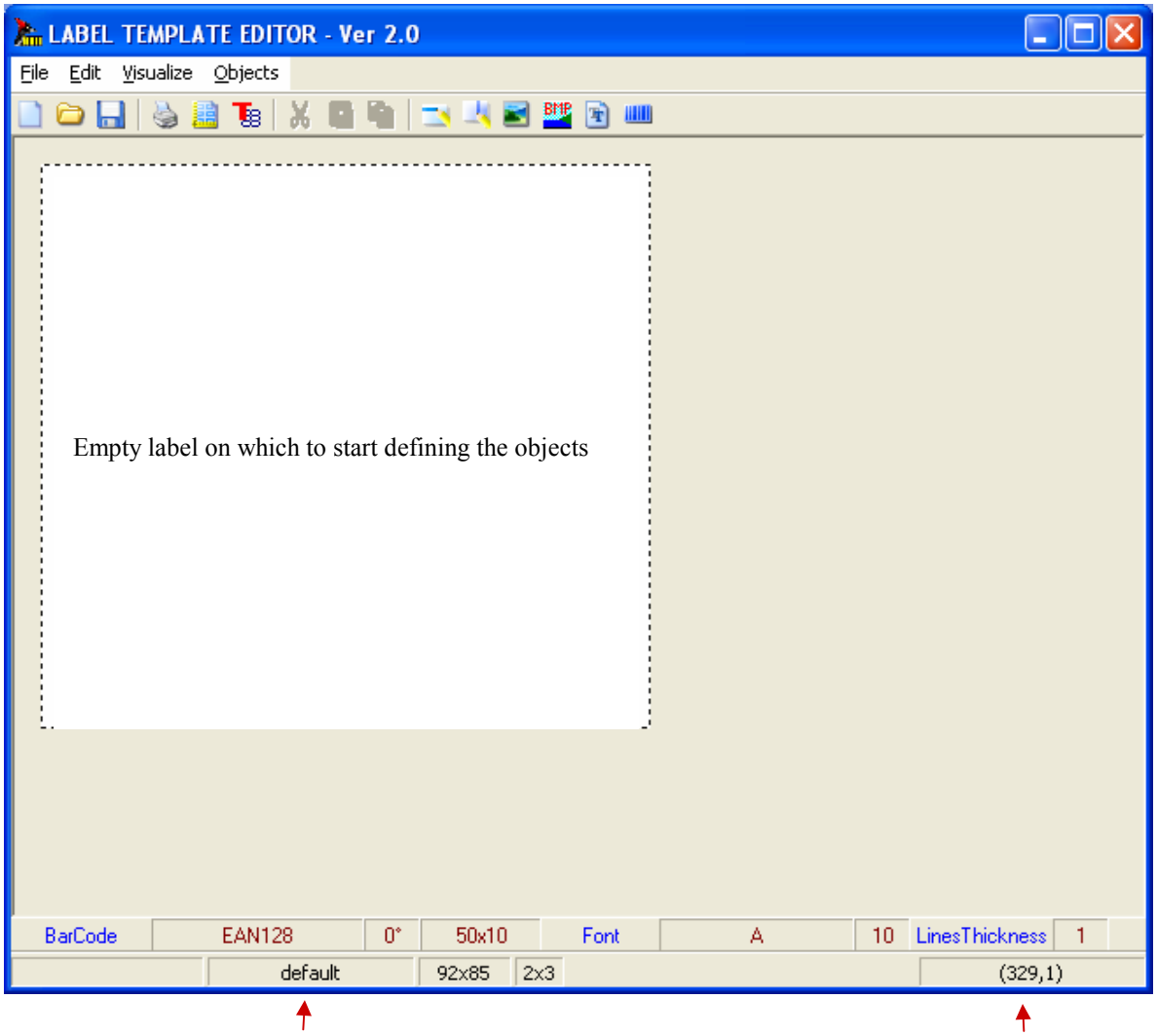
- LABEL EDITOR.
- LABEL PRINT.
- SIMULATION UTILITY.

Label editor

The function is accessible from the *Label editor* in the Utilities menu.

Program overview

The window that appears upon opening the program presents the following fields.



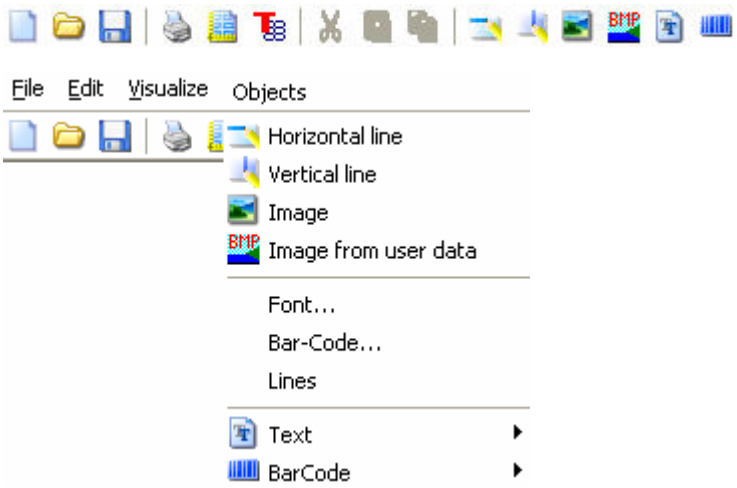
Barra di stato contenente il nome del Layout + la dimensione dell'etichetta e il numero di etichette per pagina.

Posizione del mouse (coordinate)

The main aim of the program is to define a label model, all the objects making it up and the print page (layout) and to save the information on the disk to be able to use the label model with the program function *Print labels*.

The method of defining the label is almost totally graphic*Stampa etichette* del programma Ottimo.

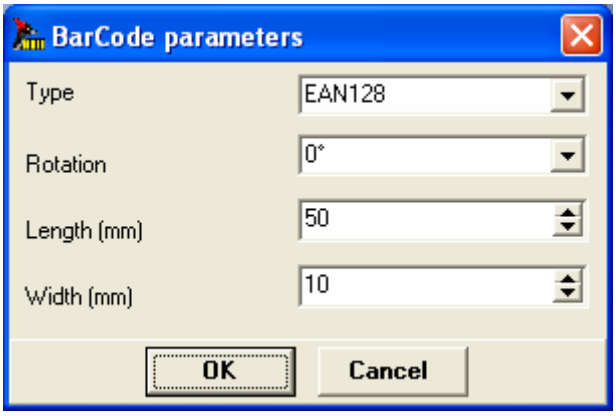
Using the tool bar
The tool bar allows fast access to the most commonly used operations and commands.

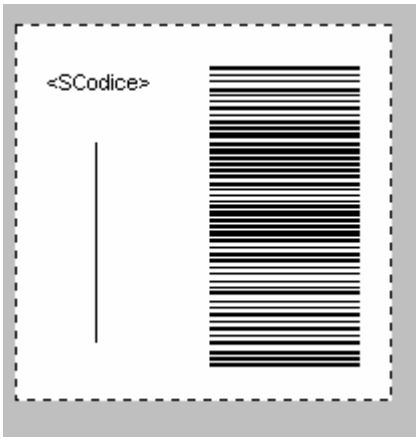


All the operations available from the tool bar may also be carried out by using the commands in the pull-down menus located above the tool bar.

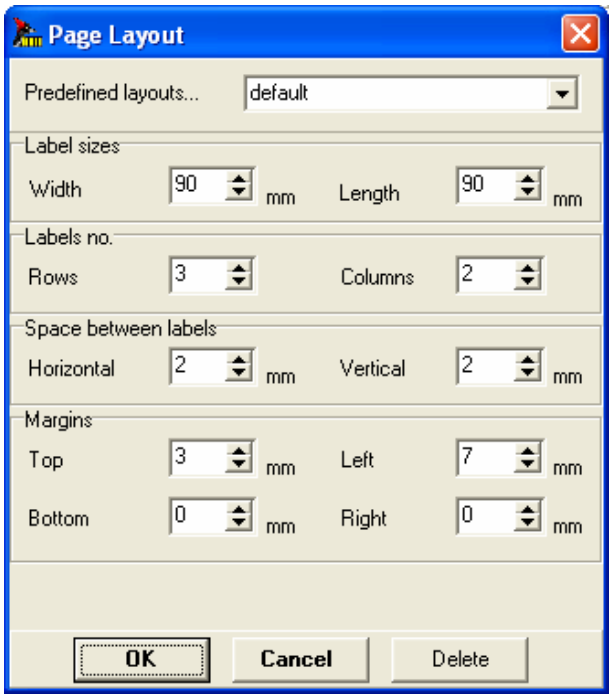
Inserting objects in a label

To create a label, the properties of reference of the basic objects are edited from the *Objects* menu; e.g. to set the type, size and direction of the barcode to be used, the following window appears:.





the objects (lines, images, barcode, text) are then arranged in the space inside the label area.



Definition of page layout.
Sheets of labels for printer with checkerboard arrangement (figure) can be found on sale. To use these sheets, it is necessary to describe their dimensional characteristics, the characteristics of the labels that they contain and the number and layout in the sheet of those labels.

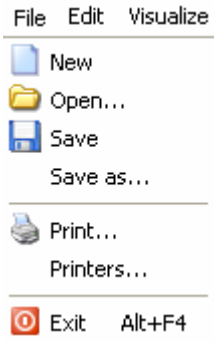
Using the menu commands

File Menu

The file menu contains the commands for saving, loading, creating and printing a label.

Certain menu commands are also available on the tool bar

CAUTION: In order for Ottimo to be able to use all the labels, they must reside in the predefined directory "LABELS", otherwise they are not found at the moment of use and therefore nothing is printed

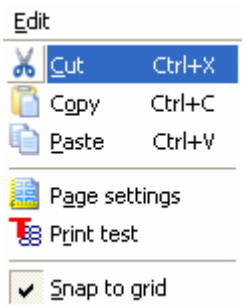


New : create a new label, at the same time erasing, without asking confirmation, everything that is present in the current label..
Open : display the disk directory with all the labels present; after selecting one of these, the data are loaded and all the constituent objects are displayed.
Save : save the label that has been designed. It requests the file name if this has not yet been assigned.
Save as : save the label that has been designed, requesting the file name.
Print : print the label design complete with all the objects
Printers : display a window for selecting the predefined printer
Exit : exit from the program

Edit Menu

The edit menu contains the commands for cutting, copying and pasting objects, for setting the page layout and testing the label position in print

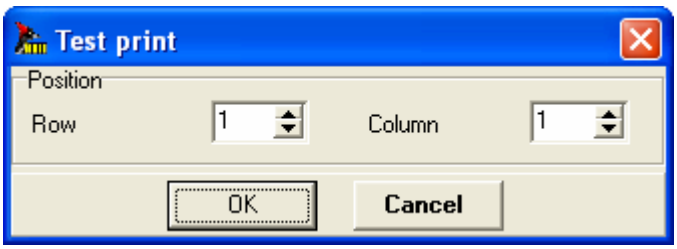
Certain menu commands menu are also available on the tool bar.



The subsequent group of commands allow a minimum of label editing
Cut : delete and store the selected object by one left click.
Copy : store the selected object by one left click

Paste : insert the last stored object in the same position in which it was removed or copied.

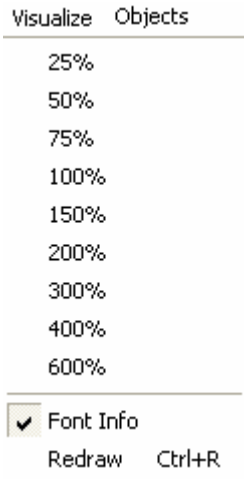
Page settings : define the sizes of the label sheets (see page layout)



Print test : print in the set position the four delimiting corners of the label to check correct positioning of the label before final printing.

Visualize Menu

The edit menu contains the commands for zooming, visualizing the characteristics and redrawing the label.



25%…600% : magnify or reduce the drawing area for better control of the actual drawing

Font Info : display a second status bar with the characteristics of the barcode and the font currently being used for the design.

Es : E.g. : BarCode of EAN128 type, rotated 90° and sized 20x40.

BarCode	EAN128	0°	50x10

Arial font with font size

Font	A	10

Whenever a text type or barcode type object is inserted, it takes on the characteristics in use at that time.

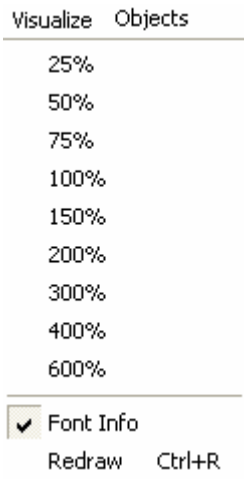
Redraw: redraw all the displayed objects in order to delete any impurities. This function may also be accessed by pressing the keys <Ctrl> + <R> simultaneously

Objects menu

The objects menu contains the commands for defining the label fields

Certain commands of the menu are also available on the tool bar

After having selected the type of object from the menu, it must be positioned on the label by shifting the cursor onto the drawing area and giving a left click. Each of the objects selected from the menu has characteristics which define the rectangular area of the label it will occupy; upon positioning the objects in the label, it will be seen that the rectangle of occupation varies from object to object.
In particular the head type objects that define an Ottimo variable field, have an area of occupation equal to the maximum number of characters of that field.



Horizontal line: insert a horizontal line of fixed dimensions. To make a longer line, it must be constructed with several objects of the.

Vertical line: as above, except that the line is vertical.

Image : load a ".BMP" or ".ICO" type image with the dimensions foreseen by the same in pixel.

Font…. : change the font in use for insertion of text fields. For further information, see the Windows guide.

Bar-Code… : change the current bar code setting: The scheduled characteristics of the bar code are

Type: the type of bar code

.

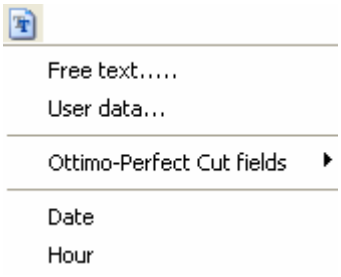
Rotation : the direction of the bar code on the label, setting the rotation at 90°, the bar code is placed vertically and the dimensions are reversed.

Length and Width: the actual dimensions of the bar code in mm, the number of characters which make it up does not change the size.

Font…. : change the font in use for insertion of text fields. For further information, see the Windows guide.

The scheduled types of bar code are: Code 11, Code 2 of 5, Code 2 of 5 Industrial, Code 3 of 9 (Code 39) , Code 3 of 9 (Code 39) Ascii, EAN8, EAN13, EAN128, Code 128, Code 128 (CharSet A) , Code 128 (CharSet B) , Code 128 (CharSet C), Code 49

Text : insert a string into the drawing, the string has a different meaning according to the type of sub-command chosen, i.e:



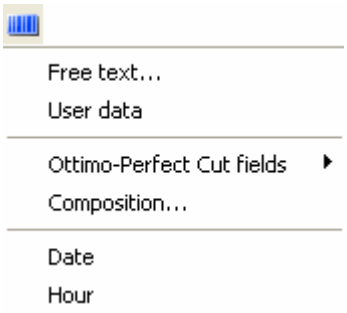
Free text: visualize a window for insertion of the text that is then displayed exactly as it has been inserted.

User data: visualize a window for insertion of the index of the external data item of the Ottimo key F5

Ottimo fields : see below.

Date : insert the date of printing.
Hour: insert the time of printing.

BarCode : insert a bar code that represents the string defined by the type of chosen sub-command, i.e.



Free text: visualize a window for insertion of the text that is then codified with the bar code

User data: visualize a window for insertion of the index of the external data item of the Ottimo key F5.

Ottimo fields: see below

Composition : visualize a window that allows a string to be composed through all the Ottimo and fixed string field.

Date : codify the printing date.
Hour: codify the printing time

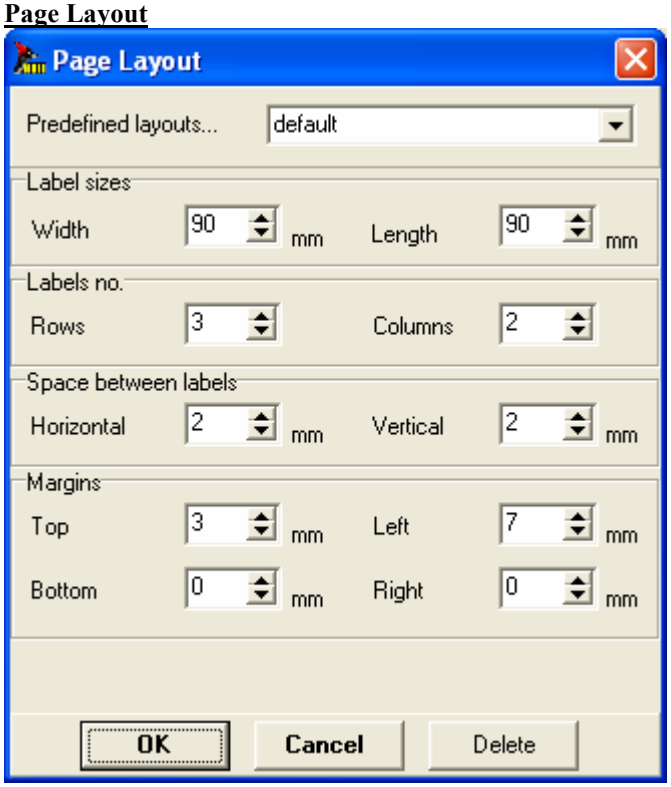
Ottimo fields : each of the Ottimo fields indicated in the underlying menu is substituted at the time of printing the labels (Appendix A) from the string of the job that the field represents:

Code	Part code
Description	Job description
Length	Part length
Width	Part width
Progressive qty.	Progressive quantity of the part
Qty. per book	Quantity of parts in each stack
Total qty.	Total quantity of required parts
Qty. per stack	Quantity of parts per pile
Pattern no.	Pattern number in print
Sheet name	Code of used material
Sheet description	Description of material
Sheet thickness	Thickness of material
Sheet colour	Color of material
Job name	List code
Job description	List description
Type	Type associated with the job

The resulting string is then displayed either as text or as bar code, according to the chosen command.

Other functions

Page Layout



Upon selecting the command “Page layout” from the menu or from the tool bar, the window shown to the side appears. This window allows all the aspects of a normal sheet of labels for printer to be defined: label sizes, number and composition of the labels on the sheet, the space between one label and another in both directions and the margins between the labels and of the sheet.
Changing the name at the top right and confirming by means of the relative button, a sheet configuration is saved that at the same time becomes the one in use.
To eliminate old configurations, just use the trash button after having chosen the configuration in: “Predefined layouts”.

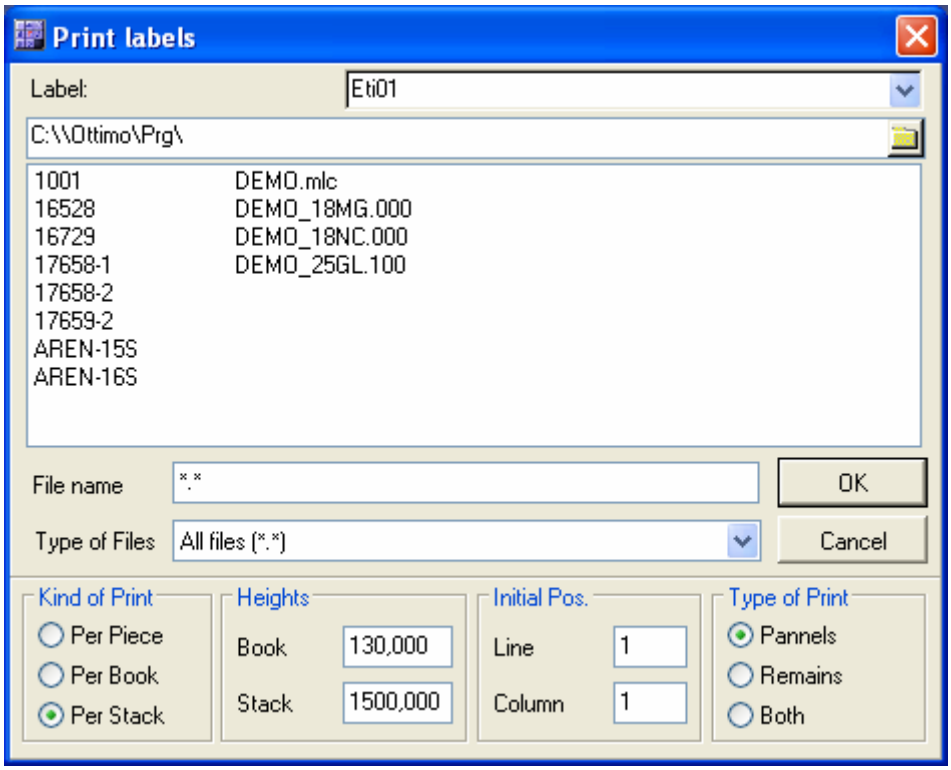
CAUTION: after deletion the old configuration can no longer be recovered

How to select an object
To select the object of a label, just position the focus on it, pressing the left mouse button.

How to shift an object
To shift a label object, just keep the left mouse button pressed down together with the key <CTRL> and then release it at the point in which the captured object is to be moved.

Print labels

The function is accessible from the item *Print* in the Utilities menu or through key F9 or from the tool bar when the button is activated.
This allows labels to be printed on the office printer, using one of the edited label formats.



Operation

Use of the program is very simple and intuitive; after having selected a label and one or more jobs for which the labels are to be printed, just confirm using the button OK.

The window is divided into 2 parts: the selection part and the configuration part.

Selection fields

Label: this allows the label to be chosen from among those prepared with the editor.

File name: this indicates the name or names of the jobs for which the labels are to be printed; the names may be written manually in this field, but they must be inserted between <"> (inverted commas) and separated by a space.

Configuration fields:

Type of print: choose the printing method from among the following.
Piece: print a label for each piece.
Stack: print a label for each stack.
Pile: print a label for each pile.

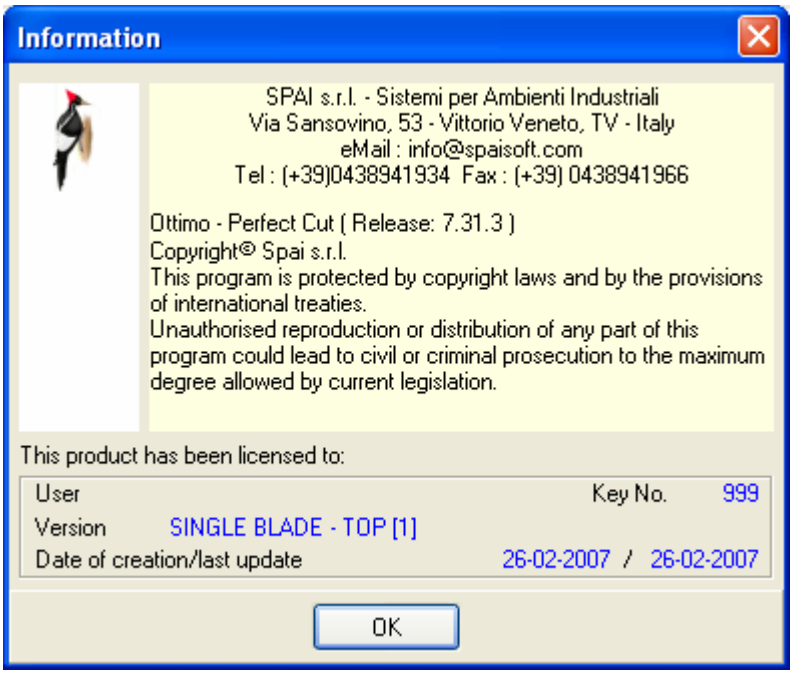
Heights: with the two following parameters, the number of pieces for each stack/pile are calculated in order to count the labels correctly.
Stack: indicate in mm the maximum stack height.
Pile: indicate in mm the maximum pile height

Initial position: the two following parameters indicate the position of the first label in the print layout.
Line: No. of the line from which label printing is to start.
Column: No. of the column from which label printing is to start.

Type of print: Select the type of print from among the following.
Panels: Print the labels for the panels
Off-cuts: Print the labels for the off-cuts
Both: Print the labels for the panels and the off-cuts

Information

This is accessible from the item *Information* in the menu *?* and displays the version and various pieces of information on the current program.


Information
SPAI s.r.l. - Sistemi per Ambienti Industriali
Via Sansovino, 53 - Vittorio Veneto, TV - Italy
eMail : info@spaisoft.com
Tel : (+39)0438941934 Fax : (+39) 0438941966
Ottimo - Perfect Cut (Release: 7.31.3)
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This product has been licensed to:
User
Key No. 999
Version SINGLE BLADE - TOP [1]
Date of creation/last update 26-02-2007 / 26-02-2007
OK

Fields visible in the window

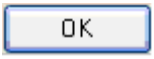
Release: this indicates the program release.

Version: This indicates the type of installed key

Key No.: this indicates the program serial number.

Password

This is required to access protected areas (typically to edit parameters that require the presence of specialized personnel) and the following window is displayed:

Operation	Digitize the key word and confirm. If no password or a wrong password is entered, the corresponding display pages will be accessible for reading only and it will not therefore be possible to edit data. The password is generally communicated by the supplier upon delivery of the product and may be requested thereafter from personnel carrying out the function of technical back-up on the product.
Description of fields	**Password** Protected field for the display of the set word.
Auxiliary functions	 CONFIRM CANCEL

Solution to the most common problems

PROGRAM SAVING ERROR
The program data do not comply with the machine configuration parameters (see displayed messages).

PROGRAM LOADING ERROR
The machine parameters have been edited and the program data do not comply with the new restrictions (see displayed messages).

HW KEY NOT OK: RUN DEMO
The hardware key is not present or not inserted correctly. Only the demo function is enabled and the calculation of the cutting plans is therefore deactivated.

UNABLE TO OPEN TEXT FILE
The language files have not been found or are damaged. It is impossible to open the program.

Release

Version

Version 7.3x

Operating System

Windows 95 / 98 / ME / NT 4 / 2000 / XP

Glossary

B

BUTTON Graphic element of varying size normally characterized by a drawing (icon) or by text.

MENU BAR This contains all the items related to the program functions.

F

FILE Name of reference of a data file.

WINDOW Graphic element containing information, drawings, data writing fields.

FOCUS Graphic highlighter (usually consisting of a black outline), which identifies the object of the currently selected page.

I

ICON Graphic element associated with a button, a menu item or a program.

M

MLC Multi-job program

P

PC Personal **C**omputer. This is the electronic equipment designed for data management.

T

FUNCTION KEYS These are the keys distinguished by the letters that go from F1 to F10 assigned to fast access of predefined functions in the current program.

TOOL BAR - bar containing the buttons for the functions of the active window.

Hardware Configuration

Required hardware:

- PC Pentium 200 MHz or over with minimum 100 Mbyte space on disk and 32 Mbyte RAM
- Color monitor SVGA
- Video card SVGA 800x600 with minimum 256 (65,000 recommended) colors.
- Printer
- Floppy Disk 1.44 MB
- CD ROM
- Hardware key.
- Mouse.

Operating Systems:

- Windows 95 / 98 / ME / NT 4 / 2000 / XP

Appendix A

1. Data format of text file for import Rel. 6

A description is given below of the format of the text files to be imported as jobs through the function *Import* of the program version 6. The format of version 5 is in any case still compatible.

1.1 In General.

The first line (header) indicates the number of subsequent lines.
There are as many lines as there are types of parts to be imported.
Each line is separated from the previous one with the characters <CR><LF>.
The fields are separated from each other by the comma (“,”).
All the dimensions must be given in **millimeters** with 3 decimal figures.
The import functions automatically, both as import for normal jobs (parts with the same thickness and color) and for multi-jobs (parts with different thickness and color). If a list of parts with different thickness and color are found in a file, the import always produces a multi-job file and vice versa.

1.2 Field format.

HDR6,<No.Parts>

<Code>,<Description>,<Length>,<Width>,<Thickness>,<Color>,<Quantity>,<Grain>,<Maxsurplus>CRLF

1st line

.....

.....

<Code>,<Description>,<Length>,<Width>,<Thickness>,<Color>,<Quantity>,<Grain>,<Maxsurplus>CRLF

nth line

Field limits:

HEADER:

Name of field	Limits	Notes
No. Parts	min = 0 max = 1000 min = 0 max = 1000 x MLC.	Number of following lines (panels).

LINES:

Name of field	Limits	Notes
Code	Max 12 alphanumeric characters	the characters must not be separated by a space
Description	Max 25 alphanumeric characters	the characters must not be separated by a space
Length	min = 1.0 max = 6500.0	length of part
Width	min = 1.0 max = 6500.0	width of part
Thickness	min = 2.0 max = 99.9	thickness of part
Color	at the most 8 alphanumeric characters	the characters must not be separated by a space
Quantity	min = 0 max = 32767	quantity of parts to be produced
Grain	0/1	part without grain/with grain
Maxsurplus	min = 0 max = 32767	Max. number of parts to be produced extra (if the parameter is fixed on value 0 for all the lines of the key, then the header parameters are significant).

E.g.:
HDR,2
S001,680.000,337.000,18.000,BB,40,0,0
S002,680.000,342.000,18.000,BB,40,0,0

Job consisting of two parts (S001, S002) without grain sized 700x300 and 750x200 with thickness 18, different color (black and white) and with required quantities of 100 and 120.

2. Data format of stock file.

The file must be contained in one of the directories "OTTIMO\MAG1" or "OTTIMO\MAG2"; the name of the file gives the name to the material, so the name should therefore comply with the rules on DOS names (8+3 extension).
All the dimensions must be given in **millimeters** with 3 decimal figures after the decimal point.

The contents of the file are:

Description=MATERIAL EXAMPLE
Length=4200.000
Width=2200.000
Thickness=18.500
Quantity=-1
Cost=100
Color=BLACK

The part to the left of the equals sign is the field recognition key (part to be kept FIXED), while the part to the right of the equals sign is the field value.

Field limits	
Description	max 20 characters
Length	100.0÷6500.0
Width	100.0÷6500.0
Thickness	2÷99.9
Quantity	-1÷32767
Cost	0÷32767
Color	max 8 characters